

---

# Mathematical Reviews

---

Vol. 4, No. 11

December, 1943

pp. 293-340

---

## TABLE OF CONTENTS

Author index . . . . .	293
Subject index . . . . .	323
Errata . . . . .	340

---

## THE MICROFILM SERVICE

Through the services of the Brown University Photographic Laboratory one can obtain, either on microfilm or as photoprint, the complete text of any article listed in MATHEMATICAL REVIEWS or available in the Brown University Library, except books and material of which the reproduction is prohibited by copyright laws.

### Procedure for Ordering Microfilm or Photoprint

1. Give your name and address.
2. State whether you wish microfilm or photoprint.
3. (a) If the article in question has been listed in MATHEMATICAL REVIEWS, give the MF number printed at the end of the title. Titles without MF numbers are copyrighted.  
(b) If the article has not been reviewed (for instance because published prior to 1939) give as accurately as possible the author, title, journal, volume, year and pages.
4. Enclose cash for the amount of the order. U. S. currency or check, made payable to Brown University, will be accepted. The minimum charge is 45¢.
5. Mail to: Brown University Photographic Laboratory, Providence, Rhode Island.

### Cost

MICROFILMS are furnished for

- 15¢ for articles with less than 25 pages.
- 30¢ for articles with more than 24 pages, but less than 50 pages.
- 50¢ for articles with more than 49 pages, but less than 100 pages.
- \$1.00 for articles with more than 99 pages.

PHOTOPRINTS cost 16¢ per sheet, each sheet containing two pages of text, except in the case of unusually large journals (larger than 7" by 10"). In the latter case you will be informed of the extra charge before the order is filled, unless you have indicated on your order that the reprint is desired even at the higher price of 16¢ per page.

**MINIMUM CHARGE.** If an order totals less than 45¢ the cash included should be raised to 45¢ in order to cover the basic expenses of this service.

Microfilm and photoprints with MF numbers show black writing on white background. Articles which are not reviewed, and which therefore do not have an MF number, are reproduced only in negative films or prints, i.e. white letters on black background. Microfilms can be read in any reading machine adapted to standard 35 mm. double perforated film. Photoprints are on sheets 10" by 14" (about 25 by 35 cm.).

## ONE-SIDE EDITION OF MATHEMATICAL REVIEWS

An edition of MATHEMATICAL REVIEWS printed on only one side of the paper is available to persons interested in making card files of reviews or wishing to add remarks to reviews in the future. This special edition may be obtained

for an additional payment of \$1.00. A regular current subscription can be changed to a one-side subscription by paying the additional \$1.00. This edition is folded but not stitched.

### MATHEMATICAL REVIEWS

*Published monthly, except August, by*

THE AMERICAN MATHEMATICAL SOCIETY, PENCE and LEON Streets, LANCASTER, PENNSYLVANIA

*Sponsored by*

THE AMERICAN MATHEMATICAL SOCIETY  
THE MATHEMATICAL ASSOCIATION OF AMERICA  
ACADEMIA NACIONAL DE CIENCIAS EXACTAS, FISICAS Y NATURALES DE LIMA  
HEER WISNUNGS GENOOTSCHAP TE AMSTERDAM  
THE LONDON MATHEMATICAL SOCIETY  
UNION MATEMATICA ARGENTINA

*Editorial Office*

MATHEMATICAL REVIEWS, BROWN UNIVERSITY, PROVIDENCE, R. I.

Subscriptions: Price \$13 per year (\$6.50 per year to members of sponsoring societies). Checks should be made payable to MATHEMATICAL REVIEWS. Subscriptions should be addressed to MATHEMATICAL REVIEWS, LANCASTER, PENNSYLVANIA, or BROWN UNIVERSITY, PROVIDENCE, RHODE ISLAND.

This publication was made possible in part by funds granted by the Carnegie Corporation of New York, the Rockefeller Foundation, and the American Philosophical Society held at Philadelphia for Promoting Useful Knowledge. These organizations are not, however, the authors, owners, publishers, or proprietors of this publication, and are not to be understood as approving by virtue of their grants any of the statements made or views expressed therein.

Entered as second-class matter February 1, 1940 at the post office at Lancaster, Pennsylvania, under the act of March 3, 1879. Accepted for mailing at special rate of postage provided for in the Act of February 26, 1925, embodied in paragraph 4, section 538, P. L. and R. authorized November 9, 1940.

an  
an

ng  
ge  
rou  
ed,  
is

54  
ver

ack  
re-  
are  
ers  
ad-  
ted  
by

ent  
by  
not

ted  
and

—  
V  
—

AB

AB

AB

AB

af

Ag

Ai

Ai

Al

Al

Al

Al

Al

Al

Al

Al

Al

Al

Am

Am

Am

Am

Am

Am

Am



# Mathematical Reviews

Vol. 4, No. 11

DECEMBER, 1943

Pages 293-340

## AUTHOR INDEX

- Abdelhay, J.  
The existence of an oscillation theorem for a special differential equation of third order. Characteristic values. 276
- Abellanas, P. F.  
Dimension of an algebraic variety. 52
- Abramescu, N.  
Sur les sections d'une surface par des plans menés par une tangente, ou par une droite passant par un point de la surface. 113
- Abramowitz, M. See Lowan, A. N.
- af Hällström, G. See Hällström.
- Agnew, R. P.  
Analytic extension by Hausdorff methods. 81
- Aitken, A. C.  
The monomial expansion of determinantal symmetric functions. 237
- Aitken, A. C. and Silverstone, H.  
Estimation of statistical parameters. 25
- Alban, M. J.  
Independence of the primitive symbols of Lewis's calculi of propositions. 182
- Albert, A. A.  
The radical of a non-associative algebra. 130  
Non-associative algebras. I, II. 186  
An inductive proof of Descartes' rule of signs. 195
- Albert, G. E.  
The closure of systems of orthogonal functions. 218
- Albuquerque, J.  
Ensembles clairsemés. 75  
Notion de "frontière" en topologie. 87  
La notion de "bord" en topologie. 223
- Alenitzyn, G.  
On the coefficients of  $p$ -valent functions. 138
- Alexandroff, A. D.  
Existence and uniqueness of a convex surface with a given integral curvature. 169  
Smoothness of the convex surface of bounded Gaussian curvature. 169  
On groups with an invariant measure. 192
- Alexandroff, P.  
On homological situation properties of complexes and closed sets. 249
- Allendoerfer, C. B. and Weil, A.  
The Gauss-Bonnet theorem for Riemannian polyhedra. 169
- Almeida, M. Ozorio de. See Ozorio de Almeida.
- Almeida Costa, A.  
On Abelian groups. 267
- Amaral, I. M. Azevedo do. See Azevedo do Amaral.
- Ambarzumian, V. A.  
A new method for the calculus of the light dispersion in a turbid medium. 92
- Anas, M.  
Surfaces dont le second Beltramien relatif à la courbure moyenne est nul. 257
- Ancochea, G.  
Théorèmes de la théorie algébrique des corps. 71
- Anderson, P. H.  
Distributions in stratified sampling. 24
- Anderson, R. D.  
Application of quantum mechanics to mortality tables. 28
- Anderson, R. L.  
Distribution of the serial correlation coefficient. 22
- Angheluță, T.  
Life and mathematical work of Emile Picard. 66
- Apéry, R.  
Sur un procédé de définition de courbes ayant un nombre élevé de rebroussements. 167  
Sur la non-existence de courbes planes du huitième degré de genre 5 admettant  $r \geq 14$  rebroussements. 167
- Aprile, Giorgio.  
Il teorema di Bézout-Severi ed i sistemi algebrici  $\infty^4$  di  $S_K$  dell' $S_r$ . 168
- Aprile, Giuseppe.  
Funzioni generatrici generalizzate, e loro applicazione ai metodi grafico-numerici di valutazione nel calcolo operatorio funzionale. 149
- Archibald, W. J.  
The integration of the differential equation of the ultra-centrifuge. 145
- Arf, C.  
Untersuchungen über quadratische Formen in Körpern der Charakteristik 2. I. 237
- Armoro, J. Garavito. See Garavito Armoro.
- Arnold, L.  
Vector solution of the three-degree case of wing bending, wing torsion, aileron flutter. 232
- Aroian, L. A.  
A new approximation to the levels of significance of the chi-square distribution. 221
- Aronszajn, N.  
Le correspondant topologique de l'unicité dans la théorie des équations différentielles. 100
- Aronszajn, N. and Weinstein, A.  
Unified theory of eigenvalues of plates and membranes. 101
- Artin, E.  
Galois theory. Edited and supplemented with a section on applications by Arthur N. Milgram. 66  
Artin, E. and Scherk, P.  
On the sum of two sets of integers. 212  
Artin, E. and Whaples, G.  
The theory of simple rings. 129
- Ascoli, G.  
Forma asintotica degli integrali dell'equazione differenziale  $y'' + A(x)y = 0$  in un caso notevole di stabilità. 43
- Astrov, G. G.  
On the calculation of the kinetic energy of fluids. 117
- Aucoin, A. A.  
Homogeneous and nonhomogeneous Diophantine equations. 130
- Auluck, F. C.  
An asymptotic formula for  $p_k(n)$ . 211
- Auluck, F. C., Chowla, S. and Gupta, H.  
On the maximum value of the number of partitions of  $n$  into  $k$  parts. 211
- Awbery, J. H.  
A problem in two-dimensional flow. 247
- Azevedo do Amaral, I. M.  
Integration of ordinary linear differential equations and solution of integral equations of the first kind. 99  
Integration of linear partial differential equations. 99  
Questions d'analyse itérative. 145

- Azevedo do Amaral, I. M. (Continued)  
On the integration of ordinary and partial linear differential equations and on the solution of integral equations of the first kind in the cases either of functions of one or of several variables. 279
- Babini, J.  
Properties of the derivatives and primitives of Legendre polynomials. 41  
On the application of finite differences to the successive derivation of composite functions. 193  
Graphical determination of real and complex roots of cubic equations. 284
- Badell, E. and González, M. O.  
Computation of phase integral by a method of complex variables. 270
- Badell, E. and Maseda, M. A.  
Components of acceleration in curvilinear coordinates. 57
- Badesco, R.  
Procédé mixte pour résoudre les problèmes de Cauchy et de Goursat relatifs à l'équation des télégraphistes. 101
- Baer, R.  
Inverses and zero-divisors. 70  
Unified theory of projective spaces and finite Abelian groups. 109  
Automorphism rings of primary Abelian operator groups. 267
- Bagchi, H.  
Cylindroid and kindred surfaces. 53  
Class of functional equations. 145
- Baidaff, B. I.  
The metric relation of Stewart and another generalization. 252
- Bailey, R. P.  
On the convergence of sequences of linear operations. 219
- Baker, G. A.  
Correlations between functions of variables. 221
- Baker, H. F.  
An introduction to plane geometry. 250
- Balachandran, K.  
Determinants connected with homogeneous products and symmetric functions of the roots of an equation. 67
- Balaguer, F. Sunyer. See Sunyer Balaguer.
- Balandin, A. A.  
Differential equation for the kinetics of contact monomolecular reactions investigated by the flow method. 292
- Balanat, M. See Herrera, F. E.
- Ballabh, R.  
Superposability. 118
- Banachiewicz, T.  
Outline of the Cracovian algorithm of the method of least squares. 90
- Band, W.  
Comparison spaces in general relativity. 55  
Is space-time flat? 56  
Vector analysis in special relativity. 56
- Banerjee, D. P.  
Properties of the functions which are self-reciprocal in Hankel's transform. 40  
On the application of the operational calculus to the expansion of a function in a series of Legendre's functions of the second kind. 81  
Limit of correlation and regression coefficients in mingled records. 104  
Congruence properties of Ramanujan's function  $\tau(n)$ . 265
- Banerjee, S. S. and Tiwari, S. Y.  
Shunt excited broadcasting antenna. 234
- Banerji, A. C.  
Instability of radial oscillations of a variable star and origin of the solar system. 117
- Banerji, D. P. See Banerjee.
- Bankier, J. D. and Leighton, W.  
Numerical continued fractions. 81
- Barmen, F. Klein-. See Klein-Barmen.
- Barnard, R. W. and Goldstine, H. H.  
The modular space determined by a positive function. 157
- Barnes, J. L. See Gardner, M. F.
- Barnhart, C. A.  
Geometric examples of convergent series. 194
- Bary, N.  
Sur la stabilité de la propriété d'être un système complet de fonctions. 272
- Basoco, M. A.  
On the Fourier developments of a certain class of theta quotients. 198
- Bateman, H.  
Orthogonal property of the hypergeometric polynomial. 83  
Asymptotic relations. 83
- Battin, I. L.  
Problem of multiple matching. 102
- Baur, F.  
Beiträge zum Problem der vollkommenen Zahlen. 265
- Beall, G.  
Transformation of data from entomological field experiments so that the analysis of variance becomes applicable. 23
- Beaumont, R. A.  
Projections of the prime-power Abelian group of order  $p^m$  and type  $(m-1, 1)$ . 133
- de Beauregard, O. C.  
Sur la mécanique analytique du point électriquement chargé. 174
- Bechmann, R.  
Elastische Schwingungen eines anisotropen Körpers von der Form eines rechtwinkligen Parallelepipeds. 62
- Beck, G.  
Sur la possibilité d'une cinématique générale. 286
- Beckenbach, E. F.  
Vector analogues of Morera's theorem. 135  
Conjugate harmonic functions. 278
- Beckenbach, E. F. and Reade, M.  
Mean-values and harmonic polynomials. 199
- Beevers, C. A. See Macewan, D.
- Begle, E. G.  
Locally connected spaces and generalized manifolds. 87  
Intersections of contractible polyhedra. 225
- Behari, R.  
Ruled surfaces whose curved asymptotic lines can be determined by quadratures. 257
- Behrbohm, H.  
Über die Mindestabfanghöhe eines Flugzeuges. 61  
Kurze Bemerkung zur graphischen Lösung gewöhnlicher linearer Differentialgleichungen 1. Ordnung. 203
- Behrbohm, H. and Pinl, M.  
Zur Theorie der kompressiblen Potentialströmungen. II. Intermediäre und singuläre Integrale der Grundgleichung der ebenen adiabatisch kompressiblen Potentialströmung. 159
- Behrend, F. A.  
On the frequency of the primes. 189
- Bell, E. T.  
Parametric solutions of certain Diophantine equations. 34  
Newton after three centuries. 65  
Polynomials on a finite discrete range. 129  
Note on a conjecture due to Euler. 240
- Bell, P. O. and Foreman, W. C.  
Euclidean applications of the projective differential geometry of the  $R_4$ -correspondent. 258
- Bellman, R.  
Fourier integrals. 272
- Benham, W. E.  
Nature of temperature. 96
- Benneton, G.  
Sur un problème d'Euler. 240  
Sur l'arithmétique des quaternions. 240

- Berenda, C. W.  
Problem of the rotating disk. 117
- Bergman, S.  
Über uneigentliche Flächenintegrale in der Theorie der analytischen Funktionen von zwei komplexen Veränderlichen. 140  
A remark on the paper "Sur les fonctions analytiques de deux variables complexes." 156  
Linear operators in the theory of partial differential equations. 159  
Residue theorems of harmonic functions of three variables. 159
- Bergman, S. and Marcinkiewicz, J.  
Sur les fonctions analytiques de deux variables complexes. 156
- Bergman, S. and Spencer, D. C.  
A property of pseudo-conformal transformations in the neighborhood of boundary points. 243
- Bergmann, P. G.  
Introduction to the theory of relativity. 55
- Berjman, E.  
Solution of the problem of least square adjustment by Gauss polynomials, using the computation and tabulation of the parametric coefficients of parabolic functions from the first to the fifth order for series having up to one hundred elements. 283
- Berkeley, E. C.  
Conditions affecting the application of symbolic logic. 125
- Bernays, P.  
A system of axiomatic set theory. 183
- Berra, A. E. Sagastume. See Sagastume Berra.
- Bers, L.  
Bounded analytic functions of two complex variables in certain domains with distinguished boundary surface. 139  
Concerning the acceleration potential. 260
- Bertram, S.  
Calculation of axially symmetric fields. 91
- Best, E. and Taussky, O.  
Class of groups. 2
- Betz, A.  
Verlauf der Strömungsgeschwindigkeit in der Nähe einer Wand bei un stetiger Änderung der Krümmung. 118
- Bewley, L. V.  
Traveling waves on electric power systems. 32
- Bhabha, H. J. and Chakrabarty, S. K.  
Calculations on the cascade theory with collision loss. 236  
The cascade theory with collision loss. 291
- Bhalotra, Y.  
Criterion for the solubility by radicals of the general quintic. 67
- Bhatnagar, P. L. and Kothari, D. S.  
A note on the principle of adiabatic invariance. 233
- Bhattacharyya, A.  
A note on Ramamurti's problem of maximal sets. 281
- Bhattacharyya, B. C.  
Alternative method of the distribution of Mahalanobis's  $D^2$ -statistic. 23  
A note on the tractrix and the cycloid as statistical distribution curves. 248
- Bhattacharyya, D. P. and Narayan, R. D.  
Moments of the  $D^2$ -statistic for populations with unequal dispersions. 105
- Biben, G.  
Sur la généralisation de la méthode de Schwarz. 144  
Sur une généralisation d'un théorème de Schwarz. 245
- Bickley, W. G.  
Effect of a free surface on compressional (shock) waves. 45  
Formulae relating to Bessel functions of moderate or large argument and order. 202
- Bickley, W. G. and Miller, J. C.  
Note on the reversion of a series. 194
- Biggeri, C.  
Exceptional values of analytic functions. 7  
Uniformization of analytic functions. 7  
General theorem referring to the Julia lines of entire functions. 76
- Bilger, G.  
Polygones et leurs étoilés. 111
- Bioche, C.  
Octogones et décagones à côtés opposés parallèles. 51
- Birkhoff, G.  
Lattice-ordered groups. 3  
Generalized arithmetic. 74
- Birkhoff, G. D.  
What is the ergodic theorem? 15  
Note on the law of the parallelogram of forces. 115  
The problem of the billiard ball and its significance in modern dynamics. 116  
On the dynamic stability. 116  
The ergodic theorems and their importance in statistical mechanics. 116  
The problem of  $n$  bodies. 116  
The mathematical concept of time and gravitation. 116  
Is a mathematical theory of aesthetics possible? 127  
Is a mathematical approach to ethics possible? 127  
The principle of sufficient reason. 127  
Modern logic and mathematics. 127  
Sir Joseph Larmor and modern mathematical physics. 181  
Matter, electricity and gravitation in flat space-time. 285
- Birnbaum, Z. W.  
Inequality for Mill's ratio. 19
- Black, M.  
Conventionalism in geometry and the interpretation of necessary statements. 127
- Blackwell, D.  
Idempotent Markoff chains. 17
- Blanc, C.  
Complexes à  $n$  dimensions et intégrales abéliennes. 78
- Blanc, C. and Fiala, F.  
Type d'une surface et sa courbure totale. 53
- Blanch, G. See Lowan, A. N.
- Blankinship, W. A.  
The curtain rod problem. 199
- Blaquier, J.  
The axiom of Zermelo. 183
- Bleick, W. E.  
Symmetric relations between the coefficients of reversed power series. 79
- Bleuler, K.  
Über den Rolle'schen Satz für den Operator  $\Delta u + \lambda u$  und die damit zusammenhängenden Eigenschaften der Green'schen Funktion. 245
- Blumenthal, L. M.  
Note on an arc without tangents. 112  
New characterizations of segments and arcs. 223  
Some imbedding theorems and characterization problems of distance geometry. 251
- Blumenthal, L. M. and Gillam, B. E.  
Distribution of points in  $n$ -space. 250
- Boas, M. L., Boas, R. P., Jr. and Levinson, N.  
The growth of solutions of a differential equation. 158
- Boas, R. P., Jr. (Cf. Boas, M. L.)  
Entire functions of exponential type. 136  
Representation of functions by Lidstone series. 271
- Boas, R. P., Jr. and Schaeffer, A. C.  
A theorem of Cartwright. 137
- Bobonis, A.  
Differential systems with boundary conditions involving the characteristic parameter. 200
- Bochner, S.  
Completely monotone functions in partially ordered spaces. 247



- Bochner, S. and Phillips, R. S.  
Absolutely convergent Fourier expansions for non-commutative normed rings. 218
- Bödewadt, U. T.  
Von den freien Schwingungen eines Kreiselpendels bei endlichen Ausschlägen. II. 173  
Ein vereinfachtes Interpolationsverfahren. 283
- Bögel, K.  
Verhalten gedämpfter und aufschaukelnder freier Schwin-  
ger unter der gleichzeitigen Einwirkung einer konstan-  
ten Reibungskraft. 42
- Bogoliuboff, N. See Kryloff, N.
- Bohnenblust, F.  
Characterization of complex Hilbert spaces. 247
- Bolt, R. H., Feshbach, H. and Clogston, A. M.  
Perturbation of sound waves in irregular rooms. 61
- Bompiani, E.  
Sul diagramma di Newton relativo ad una singolarità  
di una curva algebrica piana. 253
- Bond, W. L.  
The mathematics of the physical properties of crystals. 290
- Bondi, H.  
Generation of waves on shallow water by wind. 119
- Bonnier, G.  
Four-fold table and the heterogeneity test. 26
- Borel, E.  
Sur l'emploi du théorème de Bernoulli pour faciliter le  
calcul d'une infinité de coefficients. Application au  
problème de l'attente à un guichet. 248
- Borgnis, F.  
Die elektrische Grundschwingung des kreiszylindrischen  
Zweischichten-Hohlraums. 288  
Die magnetische Grundschwingung des kreiszylindri-  
schen Hohlraums. 288
- Born, M.  
The thermodynamics of crystal lattices. I. Discussion  
of the methods of calculation. 206
- Born, M. and Bradburn, M.  
The thermodynamics of crystal lattices. II. Calcula-  
tion of certain lattice sums occurring in thermody-  
namics. 206
- Born, M. and Ledermann, W.  
Density of frequencies in lattice dynamics. 206
- Born, W. T. and Kendall, J. M.  
Application of the Fourier integral to some geophysical  
instrument problems. 203
- Bortolotti, E.  
Über die Invarianten von Linienelementen und die pro-  
jektive Geometrie der Kurvengewebe. 256
- Bosanquet, L. S.  
Note on the Bohr-Hardy theorem. 194
- Bose, P.  
On the exact distribution of the ratio of two means be-  
longing to samples drawn from a given correlated bi-  
variate normal population. 103
- Bose, R. C. (Cf. Roy, S. N.)  
New series of balanced incomplete block designs. 33  
Affine analogue of Singer's theorem. 33  
A note on two series of balanced incomplete block de-  
signs. 128  
A note on the resolvability of balanced incomplete designs. 237
- Bose, R. C. and Kishen, K.  
Problem of confounding in the general symmetrical fac-  
torial design. 222
- Bose, R. C. and Nair, K. R.  
Complete sets of Latin squares. 33
- Botella Raduán, F.  
Group admitted by functions of a complex variable and  
Riemann surfaces and its relation to corresponding  
Riemann spaces of vanishing curvature. 10  
Continuity of the components of the fundamental tensor  
of Riemann space. Class of nonanalytic spaces. 54
- Botts, T.  
Convex sets. 111
- Bouchman, E. N.  
Problems of congestion in telephony. 103
- Bourgin, D. G.  
Properties of Banach spaces. 247
- Bouzitat, J.  
Sur une classe d'équations fonctionnelles. 140
- Boyer, J.  
Osculatory interpolation in practice. 283
- Brachkovsky, B. Z.  
Dynamic stability of elastic systems. 124  
Evaluation of the accuracy of the variation methods of  
solution of Poisson's equation. 159
- Bradburn, M. (Cf. Born, M.)  
The thermodynamics of crystal lattices. III. The equa-  
tion of state for a face-centered cubic lattice. 207
- Bradshaw, J. W.  
Modified continued fractions. 81
- Brady, C. P.  
Minimum of a function of integrals in the calculus of  
variations. 46
- Braginskaya, V. A.  
On the problem of filtration in anisotropic soil. 119
- Braithwaite, R. B.  
Characterisations of finite Boolean lattices and related  
algebras. 238
- Brand, L.  
Roots of a quaternion. 67
- Brasch, F. E.  
James Logan, a colonial mathematical scholar, and the  
first copy of Newton's Principia to arrive in the colony. 65
- Brauer, E. See Brauer, P.
- Brauer, P. and Brauer, E.  
Berichtigungen zu: Über unvollständige Anger-We-  
bersche Funktionen. 274
- Brauer, R.  
Groups whose order contains a prime number to the first  
power. I, II. 1, 2  
Nilpotency of the radical of a ring. 70  
On permutation groups of prime degree and related  
classes of groups. 266
- Brauner, K. and Müller, H. R.  
Kurven, welche von den Endpunkten einer bewegten  
Strecke mit konstanter Geschwindigkeit durchlaufen  
werden. 53
- Brinkmann, K. See Walther, A.
- Bronowski, J.  
On triple planes. III. 52  
The fixed part of the canonical system. 168
- Bronsky, A. P.  
Residual effect in rigid bodies. 232
- Brown, A. B.  
Effective parameters. 135
- Brown, S. L. and Wheeler, L. L.  
Use of the mechanical multiharmonograph for graphing  
types of functions and for solution of pairs of nonlinear  
simultaneous equations. 91  
The use of a mechanical synthesizer to solve trigono-  
metric and certain types of transcendental equations,  
and for the double summations involved in Patterson  
contours. 284
- Bruck, R. H.  
Generalized Fischer groups and algebras. 71, 238
- Bruck, R. H. and Wade, T. L.  
Bisymmetric tensor algebra. I, II. 128
- Bruner, N. See Davies, G. R.
- Buchanan, H. E.  
The present state of the three body problem. 227
- Buchin-Su.  
Moutard-Čech hyperquadrics associated with a point of  
a hypersurface. 171

- Buchstab, A.  
On an additive representation of integers. 190
- Buhl, A.  
Obituary: Tullio Levi-Civita. 1873-1941. 66  
Obituary: Emile Picard. 1856-1941. 66
- Bulgakov, B. V.  
On the application of Poincaré's method to free pseudo-linear oscillatory systems. 142  
Periodic processes in free pseudo-linear oscillatory systems. 245  
On the application of the method of van der Pol to pseudo-linear oscillatory systems with many degrees of freedom. 245  
Maintained oscillations of automatically controlled systems. 275
- Bull, A.  
Soil pressure distribution along flexible foundations. 124
- Bullig, G.  
Kettenbruchtheorie im  $n$ -Dimensionalen. (Z 3). 133
- Burchnall, J. L.  
Differential equations associated with hypergeometric functions. 197
- Burke, M. H. See Wilson, E. B.
- Burr, I. W.  
Cumulative frequency functions. 19
- Busemann, A.  
Die achsensymmetrische kegelige Überschallströmung. 118
- Busemann, H.  
Metric methods in Finsler spaces and in the foundations of geometry. 109
- Bushkovitch, A. V. See Shohat, J. A.
- Butenin, N.  
Maintained vibrating systems of gyroscopic forces. 143
- Butlewski, Z.  
Zéros des intégrales réelles des équations différentielles linéaires. 42
- Caccioppoli, R.  
Esistenza e limitazione dello spettro in un problema ai limiti per un'equazione differenziale ordinaria non lineare. 42
- Calleja, P. Pi. See Pi Calleja.
- Calugareanu, G.  
Structure des transformations ponctuelles du plan. 73
- Cameron, R. H.  
Quadratic convolution equations. 84
- Camp, B. H.  
Recent advances in mathematical statistics. I. 24
- Campbell, A. D. See Mayer, W.
- Campbell, J. W.  
Motion re moving axes. 173, 340
- Campbell, N. R.  
Replacement of perishable members of a continually operating system. 28
- Carathéodory, C.  
Maximum des absoluten Betrages des Differenzenquotienten für unimodular beschränkte Funktionen. 8  
Gepaarte Mengen, Verbände, Somenringe. 269
- Carlitz, L.  
Arithmetic of polynomials. 35  
Reciprocal of certain types of Hurwitz series. 131
- Carnap, R.  
Introduction to semantics. 209  
Formalization of logic. 209
- Carslaw, H. S.  
Note on the paper "The temperature distribution around a spherical hole in an infinite conducting medium," by Messrs. Pugh and Harris in the Phil. Mag. p. 661 (Sept. 1942). 247
- Carson, A. B.  
Analogue of Green's theorem for multiple integral problems in the calculus of variations. 48
- Cartan, H.  
Sur une caractérisation topologique de la circonférence. 147
- Castelnuovo, G.  
Lectures on analytic geometry. 250
- Cattermole, J.  
Relativistic aspect of the stress tensor of the electromagnetic field. 151
- Cesco, R. P.  
Theory of linear transformations and absolute summability of divergent series. 80
- Četajev, N. G.  
On the equations of Poincaré. 225
- Chakrabarty, S. K. (Cf. Bhabha, H. J.)  
Accurate calculations on the cascade theory of electronic showers without collision loss. 236
- Chambers, E. G. and Yule, G. U.  
Theory and observation in the investigation of accident causation. 28
- Chandra Sekar, C. and Francis, M. G.  
Method to get the significance limit of a type of test criteria. 165
- Chandrasekhar, S.  
Principles of stellar dynamics. 57  
Stochastic problems in physics and astronomy. 248  
Dynamical friction. I, II. 260
- Chandrasekhar, S. and Krogdahl, W.  
Perturbation theory for distorted stellar configurations. 58
- Chandrasekhar, S. and von Neumann, J.  
The statistics of the gravitational field arising from a random distribution of stars. II. The speed of fluctuations; dynamical friction; spatial correlations. 227
- Chandrasekharan, K.  
Logic of intuitionistic mathematics. 126
- Chang, S.-C.  
The point of inflexion of a plane curve. 167  
The singularity  $S_1^m$  of a plane curve. 167  
On the quadric of Lie. 257
- Chant, C. A.  
Isaac Newton: born three hundred years ago. 181
- Chapman, S.  
Blaise Pascal (1623-1662). Tercentenary of the calculating machine. 65
- Chapman, S. and Majid Mian, A.  
Rate of ion-production at any height in the earth's atmosphere. 30
- Chaundy, T. W.  
Expansions of hypergeometric functions. 197
- Chelidze, W.  
Über Funktionen eines Intervalls. 75
- Chen, K.-K.  
On the convergence of the conjugate series of a Fourier series. 272
- Cheng, M.-T.  
The absolute convergence of Fourier series. 156  
On strong summability of Fourier series. 272
- Chern, S.  
On the invariants of contact of curves in a projective space of  $n$  dimensions and their geometrical interpretation. 171  
On a Weyl geometry defined from an  $(n-1)$ -parameter family of hypersurfaces in a space of  $n$  dimensions. 171  
On the Euclidean connections in a Finsler space. 259  
A generalization of the projective geometry of linear spaces. 259
- Cherry, E. C. and Rivlin, R. S.  
Non-linear distortion, with particular reference to the theory of frequency modulated waves. II. 32
- Chevalley, C.  
Algebraic proof of a property of Lie groups. 2  
Composition of fields. 71



- Chiellini, A.  
Ancora sugli invarianti del sistema formato da due equazioni differenziali lineari del secondo ordine e su classi di sistemi riducibili a coefficienti costanti. 198
- Choudhury, A. C.  
4-web of the projective lines of curvature. 115
- Chow, H. C.  
Absolute summability of Fourier series. 37  
Summability factors of Fourier series. 38  
A further note on a theorem of O. Szász. 244
- Chowla, S. See Auluck, F. C.
- Christianovitch, S. A.  
On the motion of a gas-liquid mixture in porous media. 207
- Chu, L. J. See Stratton, J. A.
- Chuang, C.-T.  
Fonctions holomorphes dans le cercle unité. 8
- Chung, K.-L.  
Mutually favorable events. 102  
Generalization of Poincaré's formula in the theory of probability. 248
- Cicco, J. De. See DeCicco.
- Civin, P. See Roberts, J. H.
- Clark, C. E.  
On the join of two complexes. 172  
The Betti groups of the product of two normal spaces. 250  
The Betti groups of symmetric and cyclic products. 250
- Clarke, M. See Jaeger, J. C.
- Clarkson, J. A. and Erdős, P.  
Approximation by polynomials. 196
- Clifford, A. H.  
Matrix representations of completely simple semigroups. 4
- Clogston, A. M. See Bolt, R. H.
- Cobb, R. H.  
Some homothetic triangles related to the Euler line. 166
- Coburn, N.  
Frenet formulas for curves in unitary space. 115  
Semi-analytic unitary subspaces of unitary space. 115  
Congruences in unitary space. 171  
Conformal geometry of unitary space. 258
- Cochran, W. G.  
Sampling theory when the sampling-units are of unequal sizes. 24  
The  $\chi^2$  correction for continuity. 280
- Collatz, L.  
Einschliessungssatz für die Eigenwerte von Integralgleichungen. 83  
Berichtigung zu: Vergleich der Integralgleichungsmethode von Bucerius mit dem Ritzschen Verfahren. 283
- Collatz, L. and Zurmühl, R.  
Beiträge zu den Interpolationsverfahren der numerischen Integration von Differentialgleichungen 1. und 2. Ordnung. 149
- Comenetz, G. (Cf. Kasner, E.)  
Limit of the ratio of arc to chord. 112
- Condon, E. U.  
Principles of micro-wave radio. 205
- Cooley, J. C.  
A primer of formal logic. 125
- Coolidge, J. L.  
Systems of rational curves. 253
- Cornock, A. F. and Hughes, J. M.  
The evaluation of the complex roots of algebraic equations. 282
- Costa, A. Almeida. See Almeida Costa.
- Cotlar, M.  
Functions which are univalent on a subset of the boundary of a domain of regularity. 155
- Coulson, C. A. and Duncanson, W. E.  
Some new values for the exponential integral. 90
- Coulthard, W. B.  
Operational methods of dealing with circuits excited by sinusoidal impulses. 94
- Courant, R.  
Conformal mapping of Riemann surfaces not of genus zero. 9  
Variational methods for the solution of problems of equilibrium and vibrations. 200
- Court, N. A.  
Theory of the tetrahedron. 51
- Coutrez, R.  
Équilibre dynamique des systèmes stellaires. 58
- Coxeter, H. S. M.  
Non-Euclidean geometry. 50  
A geometrical background for de Sitter's world. 226
- Craig, A. T.  
A note on the best linear estimate. 280
- Craig, C. C.  
Recent advances in mathematical statistics. II. 25
- Crain, K. W.  
A locus related to the Euler line. 111
- Cramér, H.  
Harmonic analysis in certain functional spaces. 13
- Crespo, C. See Fraile, V.
- Cuesta Dutari, N.  
Generalized real numbers. 212  
Construction of an ordered dense set which is not continuous and whose cardinal is  $|\omega_\alpha|$ . 212
- Curry, H. B.  
Inconsistency of certain formal logics. 125  
Some advances in the combinatory theory of quantification. 182  
The Heaviside operational calculus. 245
- Curtiss, J. H.  
Distribution of the quotient of two chance variables. 16  
A note on the theory of moment generating functions. 163  
Convergent sequences of probability distributions. 248
- Dancoff, S. M. See Pauli, W.; Serber, R.
- Daniels, H. E.  
Method of improving certain routine measurements. 24
- Darrow, K. K.  
Memorial to the classical statistics. 207
- Daum, J. A.  
Basic analogue of Kummer's theorem. 82
- Davenport, H.  
On the product of three homogeneous linear forms. IV. 212
- Dauids, N. See Lowan, A. N.
- Davies, E. T.  
The first and second variations of the volume integral in Riemannian space. 115
- Davies, G. R. and Bruner, N.  
A second moment correction for grouping. 221
- Dávila C., R.  
Partition of energy in elastic waves obtained by reflection and refraction. 178
- Davis, D. S.  
Empirical equations and nomography. 147
- Day, B. B. and Sandomire, M. M.  
Use of the discriminant function for more than two groups. 104
- Day, M. M.  
Operation in Banach spaces. 14  
Ergodic theorems for Abelian semi-groups. 14
- de Almeida, M. Ozorio. See Ozorio de Almeida.
- de Beauregard, O. C. See Beauregard.
- DeCicco, J. (Cf. Kasner, E.)  
New proofs of the theorems of Beltrami and Kasner on linear families. 256
- Dehn, M. and Hellinger, E. D.  
Certain mathematical achievements of James Gregory. 181
- de Kerékjártó, B. See Kerékjártó.
- Deknatel, J.  
Lieu des points équidistants de deux ensembles. 4

- Delevsky, J.  
L'invention de la projection de Mercator et les enseignements de son histoire. 65
- de Losada y Puga, C. See Losada.
- Delsarte, J.  
Sur le gitter fuchsien. 191
- de Mira Fernandes, A. See Mira Fernandes.
- de Moraes, A. See Moraes.
- Denk, F. and Haupt, O.  
Singularitäten reeller Bogen im  $R_n$ . 113
- de Varennes e Mondonça, P. See Varennes e Mendonça.
- Dexter, G. E.  
The calculus of noncontradiction. 126
- Dhar, S. C.  
Integral representations of Whittaker and Weber functions. 275
- Dick, J.  
Transverse vibrations of a helical spring with pinned ends and no axial load. 64
- Dickinson, D. R.  
On Tchebycheff polynomials. III. 273
- Dieulefait, C. E.  
New derivations of limiting probability functions. 16  
Method of sampling. 24
- Dimsdale, B.  
Approximation of continuous functions by means of lacunary polynomials. 41
- Dines, L. L.  
On linear combinations of quadratic forms. 237
- Dive, P.  
Propagation ellipsoïdale des ondes électromagnétiques. 226
- do Amaral, I. M. Azevedo. See Azevedo do Amaral.
- Dodd, E. L.  
Tests for randomness applied to data grouped into small sets. 108
- Dolberg, M.  
The deflection of bars under compression. 230
- Doob, J. L.  
Topics in the theory of Markoff chains. 17  
Brownian movement and stochastic equations. 17  
What is a stochastic process? 103
- Doob, J. L. and Leibler, R. A.  
On the spectral analysis of a certain transformation. 219
- Dorodnitsyn, A.  
Laminar boundary layer in compressible fluid. 176
- Dosse, J.  
Strenge Berechnung magnetischer Linsen mit unsymmetrischer Feldform nach  $H = H_0/(1 + (z/a)^2)$ . 32
- Dotterer, R. H.  
A supplementary note on the rules of the antilogism. 183
- Draper, G. H.  
Newtonian mass, its definition and determination. 57
- Dresden, A.  
Iteration of linear homogeneous transformations. 68  
The derivatives of composite functions. 193
- Dryden, H. L.  
A review of the statistical theory of turbulence. 263
- Drymael, J.  
The design of trusses and its influence on weight and stiffness. 180
- Daschanelidse, G. J. and Radzig, M. A.  
Die dynamische Stabilität eines Ringes unter der Wirkung der normalen periodischen Belastung. 179
- Dubiago, A. D.  
On some questions of motion, structure and disintegration of comets. I, II. 174
- Dudley, L. P.  
Built-in and continuous beams. 180
- Duffin, R. J. and Eachus, J. J.  
Some notes on an expansion theorem of Paley and Wiener. 97
- Dufresnoy, J.  
Sur les cercles de remplissage des fonctions méromorphes. 138
- Duncan, W. J.  
Free and forced oscillations of continuous beams: treatment by the admittance method. 179
- Duncanson, W. E. See Coulson, C. A.
- Dunford, N. and Stone, M. H.  
Representation theorem for Boolean algebras. 71
- Duntley, S. Q.  
The mathematics of turbid media. 286
- Durañona y Vedia, A.  
Linear operators in Hilbert space. 13
- Dutari, N. Cuesta. See Cuesta Dutari.
- Duthie, W. D.  
Segments of ordered sets. 74
- Dwight, H. B.  
Inverse functions of complex quantities. 73  
Formulas for the magnetic-field strength near a cylindrical coil. 93
- Dwyer, P. S.  
Grouping methods. 24  
Recent developments in correlation technique. 164
- Eachus, J. J. See Duffin, R. J.
- Eckmann, B.  
Systeme von Richtungsfeldern in Sphären und stetige Lösungen komplexer linearer Gleichungen. 173
- Edge, W. L.  
A type of periodicity of certain quartic surfaces. 110  
Sylvester's unravelment of a ternary quartic. 167  
Notes on a net of quadric surfaces. V. The pentahedral net. 254
- Edmonds, S. M.  
Multiplication of series which are infinite in both directions. 79
- Ehresmann, C.  
Espaces fibrés de structures comparables. 146
- Eilenberg, S.  
Banach space methods in topology. 223
- Eilenberg, S. and Harrold, O. G., Jr.  
Continua of finite linear measure. I. 172
- Eilenberg, S. and MacLane, S.  
Group extensions and homology. 88  
Natural isomorphisms in group theory. 134  
Relations between homology and homotopy groups. 224
- Eilenberg, S. and Wilder, R. L.  
Uniform local connectedness and contractibility. 87
- Einstein, A.  
Demonstration of the non-existence of gravitational fields with a non-vanishing total mass free of singularities. 55
- Einstein, A. and Pauli, W.  
On the non-existence of regular stationary solutions of relativistic field equations. 226
- Eisenhart, C. See Swed, F. S.
- Eksergian, R.  
The fluid torque converter and coupling. 229
- Elkins, T. A.  
Nomograms for computing tidal gravity. 284
- Ellis, H. W. See Jeffery, R. L.
- Emde, F. See Jahnke, E.
- Epstein, P. S.  
On the theory of elastic vibrations in plates and shells. 178
- Erdélyi, A.  
Integral equations for Lamé functions. 82  
On certain expansions of the solutions of the general Lamé equation. 140  
Integral equations for Heun functions. 140
- Erdélyi, A. and Etherington, I. M. H.  
Some problems of non-associative combinations. II. 68

- Erdős, P. (Cf. Clarkson, J. A.)  
 Law of the iterated logarithm. 16  
 Elementary proof of some asymptotic formulas in the theory of partitions. 36  
 On the convergence of trigonometric series. 271  
 On some convergence properties of the interpolation polynomials. 273  
 Erdős, P. and Kakutani, S.  
 On non-denumerable graphs. 249  
 Erdős, P. and Szegő, G.  
 Problem of I. Schur. 41  
 Erdős, P. and Tarski, A.  
 On families of mutually exclusive sets. 269  
 von Erhardt, R. and von Erhardt-Siebold, E.  
 The helix in Plato's astronomy. 65  
 Archimedes' Sand-Reckoner. 181  
 The astronomy of Johannes Scotus Erigena. 181  
 Cosmology in the "Annotationes in Marcianum." 181  
 More light on Erigena's astronomy. 181  
 Ertel, H.  
 Über hydrodynamische Wirbelsätze. 262  
 Escardó, E. Linés. See Linés Escardó.  
 Eschler, H.  
 Elementare Theorie des Querstosses auf Stäbe und Platten. 123  
 Estermann, T.  
 A new proof of a theorem of Minkowski. 189  
 Etherington, I. M. H. (Cf. Erdélyi, A.)  
 Some problems of non-associative combinations. I. 68  
 Evans, R. C. and Peiser, H. S.  
 Machine for the computation of structure factors. 91  
 Evans, W. D.  
 Standard error of percentiles. 103  
 Everett, C. J., Jr.  
 Extension theory for rings. 69  
 Affine geometry of vector spaces over rings. 166  
 Faber, K.  
 Über den Zusammenhang der drei Typen von partiellen Differentialgleichungen zweiter Ordnung in zwei Veränderlichen mit gewissen Funktionentheorien. 246  
 Favard, J.  
 Généralisation de la condition de Lipshitz d'ordre un. 74  
 Feather, N.  
 On the statistics of random distributions of paired events, with applications to the results obtained in the use of the interval selector with particle counters. 223  
 Federer, H. and Morse, A. P.  
 Some properties of measurable functions. 213  
 Fedoroff, V. S.  
 Sur les fonctions harmoniques. 277  
 Fehr, H.  
 Obituary: Henri Lebesgue. 1875-1941. 65  
 Feld, J. M.  
 Whirl-similitudes, Euclidean kinematics, and non-Euclidean geometry. 54  
 Feldheim, E.  
 Formules d'inversion et autres relations pour les polynômes orthogonaux classiques. 41  
 Feldman, C. B. See Schelkunoff, S. A.  
 Feller, W.  
 Some geometric inequalities. 168  
 On A. C. Aitken's method of interpolation. 283  
 Ferguson, A.  
 Newton and the "Principia." 65  
 Fernandes, A. de Mira. See Mira Fernandes.  
 Ferrand, J.  
 Sur les fonctions holomorphes ou méromorphes dans une couronne. 138  
 Sur la représentation conforme. 139  
 Ferrari, E.  
 Bertrand's paradox. 16  
 Feshbach, H. See Bolt, R. H.  
 Fessenkoff, V.  
 Théorie dynamique de la lumière zodiacale. 117, 340  
 Fiala, F. See Blanc, C.  
 Ficken, F. A.  
 Rosser's generalization of the Euclid algorithm. 265  
 Finney, D. J.  
 Distribution of a variate whose logarithm is normally distributed. 20  
 Fischer, C. H.  
 Sequence of discrete variables exhibiting correlation due to common elements. 23  
 Fisher, R. A.  
 Negative binomial distribution. 26  
 Likelihood solution of a problem in compounded probabilities. 26  
 Interpretation of experimental four-fold tables. 26  
 New cyclic solutions to problems in incomplete blocks. 27  
 The theory of confounding in factorial experiments in relation to the theory of groups. 127  
 Some combinatorial theorems and enumerations connected with the numbers of diagonal types of a Latin square. 183  
 Completely orthogonal  $9 \times 9$  squares. A correction. 184  
 Fitch, F. B.  
 A basic logic. 125  
 Flax, A. H.  
 Three-dimensional wing flutter analysis. 232  
 Flexner, W. W. and Walker, G. L.  
 Military and naval maps and grids. 111  
 Foreman, W. C. See Bell, P. O.  
 Försterling, K.  
 Über die Ausbreitung elektromagnetischer Wellen in einem magnetisierten Medium bei senkrechter Incidenz. 287  
 Forsythe, A.  
 Divisors of zero in polynomial rings. 129  
 Forsythe, G. E. and Schaeffer, A. C.  
 Remarks on regularity of methods of summation. 80  
 Fort, T.  
 Generalizations of the Bernoulli polynomials and numbers and corresponding summation formulas. 79  
 Fortier, A.  
 Sur le calcul graphique des intumescences de hauteur finie. 229  
 Fortin, R.  
 Étude analytique et graphique de la poutre continue. 230  
 Foster, M.  
 Note on autopolar surfaces. 113  
 Foulkes, H. O.  
 Collineatory transformation of a square matrix into its transpose. 68  
 Fox, R. H.  
 On homotopy type and deformation retracts. 224  
 On the deformation retraction of some function spaces associated with the relative homotopy groups. 224  
 Fraile, A. (Cf. Fraile, V.)  
 Generalization of the ordinary analytic geometry. 251  
 Fraile, V., Fraile, A. and Crespo, C.  
 Locus and loci of point domains in the plane. 51  
 Frame, J. S.  
 Double coset matrices and group characters. 192  
 Francis, M. G. See Chandra Sekar, C.  
 Frank, P.  
 Influence of an "uneven" anisotropy on the path of light rays. 92  
 Frankel, S.  
 Characteristic impedance of parallel wires in rectangular troughs. 93  
 Frankl, F.  
 Heat transfer in the turbulent boundary layer of a compressible gas at high speeds. 121



- Freudenthal, H.  
 Simplicialzerlegungen von beschränkter Flachheit. 88
- Friedlander, F. G.  
 On the solutions of the wave equation with discontinuous derivatives. 160  
 On the reflexion of a spherical sound pulse by a parabolic mirror. 160  
 Note on a limit related to the curvatures of two surfaces. 170
- Friedrichs, K. O. and Stoker, J. J.  
 Forced vibrations of systems with nonlinear restoring force. 275
- Froda, A.  
 Mesures extérieure et intérieure des ensembles-image des fonctions multiformes ou uniformes de variables réelles. 5
- Frössel, W.  
 Berechnung der Reibung und Tragkraft eines endlich breiten Gleitschuhes auf ebener Gleitbahn. 229
- Frucht, R.  
 A contribution to the elementary theory of surfaces. 113  
 Coronas of groups and their subgroups, with an application to determinants. 191  
 On some inequalities. 268
- Fry, C. G. and Hughes, H. K.  
 Asymptotic developments of certain integral functions. 137
- Fuchs, K.  
 Statistical mechanics of binary systems. 29  
 Statistical mechanics of many component gases. 30
- Fuchs, W. H. J.  
 A note on convergence factors. 79
- Fuchs, W. H. J. and Rogosinski, W. W.  
 A note on Mercer's theorem. 272
- Fueter, E.  
 Geschichte der exakten Wissenschaften in der Schweizerischen Aufklärung (1680-1780). 65
- Fueter, R.  
 Über einen Hartogs'schen Satz in der Theorie der analytischen Funktionen von  $n$  komplexen Variablen. 139
- Gabriel, F.  
 Graphisch-rechnerisches Verfahren zur schnellen Ermittlung von Trefferprozenten unter einfachen und erschwerenden Bedingungen. "Treffer-spinne." 103
- Gage, R.  
 Contents of Tippet's "Random Sampling Numbers." 223
- Gage, W. H.  
 An arithmetical identity for the form  $ab - c^2$ . 188
- Gagut, A. F.  
 Approximate calculation of the flutter of an aeroplane wing. 121
- Galanin, A. D.  
 Die Bewegung des Mesons im homogenen magnetischen Feld. 94  
 Untersuchung der Eigenschaften des Elektronen- und Mesonenspins in der klassischen Näherung. 95, 340
- Galerkin, B. G.  
 On a stability problem in elastic systems. 124
- Galvani, O.  
 Sur la réalisation de certains espaces à parallélisme absolu par des congruences de droites. 171  
 Sur les connexions euclidiennes à courbure non nulle réalisables par des congruences de droites. 259
- Gama, L. I.  
 Improper integral  $\int_0^{+\infty} B(\alpha) d\alpha / (\omega^2 - \alpha^2)$ . 98
- Ganapathy Iyer, V.  
 A property of the maximum modulus of integral functions. 137
- Gantmacher, F. R. and Segal, B. I.  
 A method of hydromechanical design of a system of dams. 229
- Garabedian, H. L.  
 Cesàro kernel transformation. 80  
 Hausdorff integral transformations. 80
- Garavito Armero, J.  
 Elements of some entire functions. 155
- García, G.  
 Generalization of Sundman's fundamental equality to the case of more than three bodies. 57  
 Generalization of the inequality of Sundman to the case of more than three bodies and to the case of a gravitational gas. 57  
 Three-body problem. 57  
 Scientific work of George D. Birkhoff. 65  
 On the problem of  $n$  bodies and the motion of a gravitational gas (or a nebulous one). 174  
 On a new form of the inequalities of K. Sundman in the problem of three bodies. 174  
 Generalization of the formula of Lagrange. Generalization of Sundman's inequality, deduced from the homogeneity of the potential and Birkhoff's auxiliary function for the problems of  $n$  bodies and of infinitely many bodies (gravitational or nebulous gas). 174  
 On a generalization of a new inequality derived from K. Sundman's auxiliary function in the problem of three bodies generalized by George D. Birkhoff. 174  
 On the regularization of the plane problem of three bodies. 174  
 On the gyroscopic effect in the motion of a projectile. 225
- García Rúa, J.  
 On radial third-order cycles. 252
- Gardner, M. F. and Barnes, J. L.  
 Transients in linear systems. 150
- Garnea, E. G.  
 On a new application of Jacobi polynomials in connection with the mean value theorem. 278
- Garvey, S. J. and Hetzel, K. W.  
 Analytical geometry in common layouts. I. The case of retraction of an undercarriage about a single axis. 284
- Gaspar, E.  
 The curve of contact of a conoid with its directrix. 166
- Gaspar, F. L.  
 On a property of algebraic equations with real roots. 196
- Gauthier, L.  
 Au sujet d'un théorème de M. Apéry sur les quintiques. 167  
 Une involution d'ordre deux représentant la variété cubique de l'espace à quatre dimensions. II. 253
- Geary, R. C.  
 Inherent relations between random variables. 21  
 The estimation of many parameters. 165
- Gebelein, H.  
 Das statische Problem der Korrelation als Variations- und Eigenwertproblem und sein Zusammenhang mit der Ausgleichsrechnung. 104  
 Bemerkung über ein von W. Höfding vorgeschlagenes, massstabsinvariantes Korrelationsmass. 279
- Geiringer, H.  
 Probability of arbitrary events. 16  
 Observations of analysis of variance theory. 106
- Gevrey, M.  
 Sur un procédé de résolution, dans le plan, du problème aux limites linéaires le plus général relatif aux équations intégrodifférentielles du type elliptique. 143
- Gheorghiu, G. T.  
 Classe de surfaces. 53
- Ghermanescu, M.  
 Équations fonctionnelles du premier ordre. 145
- Ghosh, N. N.  
 Dyadics and multidyadics in hyperspace. 54  
 Tortuosity of submanifolds of a variety. 115  
 A matrix method of analysing strain and stress in hyperspace. 179
- Gilbert, P. W.  
 $n$ -to-one mappings of linear graphs. 88
- Gillam, B. E. See Blumenthal, L. M.

- Ginsburg, V. L.  
On the dispersion of high frequency acoustic waves in liquids. 121  
On the reflection of an electromagnetic impulse from the Heaviside layer. 151, 287  
The relativistic theory of excited spin states of the proton and the neutron. 236
- Giraud, G.  
Figure d'équilibre relatif d'une masse tournante constituée par un liquide et par un noyau solide immergé. 117  
Sur les zéros de certaines fonctions de Bessel et de Whittaker. 197
- Girshick, M. A.  
Distribution of roots of a polynomial with random complex coefficients. 21, 164
- Glagolev, N. I.  
Elastic stresses along the bottom of a dam. 264
- Glaser, W.  
Strenge Berechnung magnetischer Linsen der Feldform  $H = H_0/(1 + (z/a)^2)$ . 32  
Über elektronenoptische Abbildung bei gestörter Rotationsasymmetrie. 204
- Glass, T. F. and Leighton, W.  
On the convergence of a continued fraction. 195
- Glock, W. S.  
Rapid method of correlation for continuous time series. 27
- Gnedenko, B.  
On locally stable probability of distributions. 102  
Investigation of the growth of homogeneous random processes with independent increments. 103
- Godart, O.  
Mouvement de particules chargées dans le champ d'un dipôle magnétique sur une famille d'orbites périodiques. 57
- Goddard, L. S.  
Bases for the prime ideals associated with certain classes of algebraic varieties. 168
- Godeaux, L.  
On surfaces of fourth order which contain two skew cubics. 253  
Sur la surface du quatrième ordre contenant trente-deux droites. 253
- Goffman, C.  
The approximation of arbitrary biunique transformations. 172
- Goguel, J.  
Sur la modification de contraintes intérieures par relaxation. 179  
Calcul des contraintes, dans l'hypothèse de la relaxation complète. 179
- Goldstine, H. H. (Cf. Barnard, R. W.)  
The calculus of variations in abstract spaces. 201
- Golomb, M. See Maiti, M. G.
- Gonçalves, J. Vicente. See Vicente Gonçalves.
- Gonçalves Miranda, M.  
Tensor calculus. 172
- Gontcharoff, W.  
Sur la distribution des cycles dans les permutations. 102  
Sur une extension du théorème de Gauss-Lucas. 155
- González, M. O. (Cf. Badell, E.)  
Relations between the classical methods of solving ordinary differential equations. 99  
Generalization of Menelaus' theorem. 166
- Goodier, J. N.  
Buckling of compressed bars by torsion and flexure. 64  
Flexural-torsional buckling of bars of open section, under bending, eccentric thrust or torsional loads. 64  
Torsional and flexural buckling of bars of thin-walled open section under compressive and bending loads. 64
- Gora, E.  
Quantentheorie der Strahlungsdämpfung. 290
- Göring, E.  
Erweiterung der Mises'schen Kollektive und entsprechender Ausbau der Theorie der Wahrscheinlichkeitsrechnung. 15
- Goubau, G.  
Reziprozität der Wellenausbreitung durch magnetisch doppelbrechende Medien. 287
- Gran Olsson, R.  
Elastische Knickung gerader Stäbe von exponentiell veränderlichem Querschnitt unter dem Einfluss ihres Eigengewichtes. 264  
Unsymmetrische Biegung der Kreisplatte von quadratisch veränderlicher Steifigkeit. III. 264
- Green, A. E.  
Stress systems in anisotropic plates. IV. 123
- Green, G.  
Corresponding problems in periodic and steady flow. 45
- Green, J. W.  
A special type of conformal map. 156
- Greenberg, H. J. and Wall, H. S.  
Hausdorff means included between  $(C,0)$  and  $(C,1)$ . 80
- Greenwood, T.  
Fondements de la géométrie euclidienne. 50  
La méthode axiomatique en géométrie. 127  
La valeur des géométries non-Euclidiennes. 210
- Greville, T. N. E.  
"Census" methods of constructing mortality tables and their relation to "insurance" methods. 281
- Griffith, L.  
A theory of the size distribution of particles in a comminuted system. 249
- Gross, B.  
Theory of dielectric media. 31  
New integral transformation. 98  
Integral transformation which is of interest in electrotechnics. I, II. 98  
On an integral transformation of general circuit theory. 157  
On the principle of superposition in the theory of linear electric circuits. 206
- Grosser, C. E.  
Determination of the sum of principal stresses by graphical and mechanical means. 264
- Grosskopf, J.  
Das Strahlungsfeld eines vertikalen Dipolenders über geschichtetem Boden. 287  
Über das Zennecksche Drehfeld im Bodenwellenfeld eines Senders. 288
- Grove, V. G.  
The transformation  $T$  of congruences. 53
- Grünberg, G. A.  
Suggestions for a theory of the coastal refraction. 205  
Theory of the coastal refraction of electromagnetic waves. 287
- Grünberg, G. A., Kontorovitch, M. I. and Lebedev, N. N.  
Zeitliche Entwicklung des Wärmedurchschlags fester Isolatoren. 32
- Grundy, P. M.  
A generalization of additive ideal theory. 129
- Grunsky, H.  
Eindeutige beschränkte Funktionen in mehrfach zusammenhängenden Gebieten. II. 270
- Guilford, J. P. and Lyons, T. C.  
On determining the reliability and significance of a tetrachoric coefficient of correlation. 165
- Guinand, A. P.  
Summation formulae and self-reciprocal functions. III. 98  
Simple Fourier transformations. 157
- Gumbel, E. J.  
Simple tests for given hypotheses. 26  
Frequency distribution of extreme values in meteorological data. 29  
Probability-interpretation of the observed return-periods of floods. 29



- Gumbel, E. J. (Continued)  
 Statistical control-curves for flood-discharges. 166  
 On serial numbers. 280
- Gunderson, N. G.  
 Some theorems on the Euler  $\phi$ -function. 188
- Gunther, N.  
 Sur les modules des formes algébriques. 158
- Gupta, H. (Cf. Auluck, F. C.)  
 Numbers of the form  $4^a(8b+7)$ . 33  
 On an asymptotic formula in partitions. 190  
 A formula in partitions. 211  
 An inequality in partitions. 241
- Gupta, Q. C. See Seth, G. R.
- Gutiérrez Novoa, L.  
 Geometrical applications of certain logarithmic integrals. 193
- Gutton, H. and Ortusi, A.  
 Sur le rendement maximum d'un projecteur d'ondes. 233
- Haavelmo, T.  
 The statistical implications of a system of simultaneous equations. 220
- Hadamard, J.  
 Dirichlet problem for the hyperbolic case. 44  
 Problem of diffusion of waves. 45
- Hadwiger, H.  
 Gegenseitige Bedeckbarkeit zweier Eibereiche und Isoperimetrie. 112  
 Bemerkungen über Gitter und Volumen. 112
- Haenzel, G.  
 Die Polygonfläche und das periodische System der Elemente. 290
- Haldane, J. B. S.  
 Moments of the distributions of powers and products of normal variates. 20  
 Mode and median of a nearly normal distribution with given cumulants. 20  
 Fitting of binomial distributions. 26  
 Selection against heterozygosis in man. 166
- Hall, D. W.  
 A partial solution of a problem of J. R. Kline. 147
- Hall, N. A.  
 The solution of the trinomial equation in infinite series by the method of iteration. 282
- af Hällström, G.  
 Zwei Beispiele ganzer Funktionen mit algebraischem Höchstindex einer Stellensorte. 7
- Halmos, P. R.  
 Finite dimensional vector spaces. 11
- Halmos, P. R. and von Neumann, J.  
 Operator methods in classical mechanics. II. 14
- Halmos, P. R. and Samelson, H.  
 Monothetic groups. 2
- Hameed, A.  
 Mutually self-polar tetrahedra. 111
- Hannink, G.  
 Verlagerung und Nichteinfachheit von Gruppen. 267
- Hansel, C. W.  
 An extension of nomography. 284
- Hantzche, W. and Wendt, H.  
 The compressible potential flow past elliptic symmetrical cylinders at zero angle of attack and with no circulation. 118  
 Der Kompressibilitätseinfluss für dünne wenig gekrümmte Profile bei Unterschallgeschwindigkeit. 177
- Hardy, G. H.  
 Lebesgue's constants in the theory of Fourier series. 36
- Hardy, G. H. and Littlewood, J. E.  
 Theorems concerning mean values of analytic or harmonic functions. 8
- Harman, H. H. See Holzinger, K. J.
- Harris, A. J. See Pugh, H. L. D.
- Harrison, C. W., Jr.  
 Radiation from vee antennas. 288
- Harrold, O. G., Jr. See Eilenberg, S.
- Hart, B. I.  
 Tabulation of the probabilities for the ratio of the mean square successive difference to the variance. Note by John von Neumann. 22  
 Significance levels for the ratio of the mean square successive difference to the variance. 165
- Härtel, W.  
 Zur Theorie visuell beobachteter Oszillogramme von zeitaufgelösten periodischen Vorgängen. 284
- Hartley, H. O.  
 Probability integral of the range in samples of  $n$  observations from a normal population. II. Numerical evaluation of the probability integral. 19  
 Range in random samples. 21
- Hartman, P.  
 Divergence of non-harmonic gap series. 39
- Hartman, P. and Wintner, A.  
 Infinitesimal generators of integral convolutions. 18  
 Integrability in the large and dynamical stability. 226
- Hasel, A. A.  
 Estimation of volume in timber stands by strip sampling. 24
- Hasse, H.  
 Der  $n$ -Teilkörper eines abstrakten elliptischen Funktionenkörpers als Klassenkörper, nebst Anwendung auf den Mordell-Weilschen Endlichkeitssatz. 239  
 Zur arithmetischen Theorie der algebraischen Funktionenkörper. 239
- Haupt, O. (Cf. Denk, F.)  
 Über Lösungen linearer Differentialgleichungen mit Asymptoten. 276  
 Über das asymptotische Verhalten der Lösungen gewisser linearer gewöhnlicher Differentialgleichungen. 276
- Haurwitz, B.  
 The applications of mathematics in meteorology. 178  
 The effect of a gradual wind change on the stability of waves. 229
- Havelock, T. H.  
 Drifting force on a ship among waves. 60  
 Damping of the heaving and pitching motion of a ship. 60
- Hay, G. E. See Prager, W.
- Hazard, K. E.  
 Index theorems for the problem of Bolza in the calculus of variations. 47
- Head, J. W. See Morris, J.
- Heath, R. V.  
 A magic cube with  $6n^3$  cells. 210
- Hedge, L. B.  
 Transformations of multiple Fourier series. 272
- Heinhold, J.  
 Geometrie der Zahlen. 36
- Heinrich, G.  
 Über Strömungen von Schäumen. 177
- Heins, A. E.  
 A mixed boundary value problem. Some remarks on a problem of A. Weinstein. 198
- Heins, M. H.  
 Continuation of a Riemann surface. 77
- Heisenberg, W.  
 Die "beobachtbaren Größen" in der Theorie der Elementarteilchen. I, II. 292
- Heiter, W.  
 Influence of radiation damping on the scattering of light and mesons by free particles. I. 95  
 On the particle equation of the meson. 235
- Hellinger, E. D. See Dehn, M.
- Hellinger, E. D. and Wall, H. S.  
 Contributions to the analytic theory of continued fractions and infinite matrices. 244
- Helmer, O.  
 The elementary divisor theorem for certain rings without chain condition. 185

- Helsel, R. G. and Radó, T.  
The transformation of double integrals. 269
- Hencky, H.  
Determining critical states of equilibrium of plates and shells under initial stress. 63
- Herrera, F. E. and Balanzat, M.  
Extension of Dirichlet's function to the complex domain. 193
- Herring, C.  
Character tables for two space groups. 2
- Herriot, J. G.  
Nörlund summability of double Fourier series. 38
- Herzberger, M.  
Direct methods in geometrical optics. 204  
A direct image error theory. 204
- Hetzl, K. W. See Garvey, S. J.
- Higgins, T. J.  
Method for solving the torsion problem. 64  
Whittaker's method for the roots of a power series. 90  
Vector potential and inductance of a circuit comprising linear conductors of different permeability. 94  
Formulas for the inductance of rectangular tubular conductors. 94  
A comprehensive review of Saint-Venant's torsion problem. 122  
The inductance of tubular conductors of eccentric-annular cross-section. 151  
New formulas for the inductance and reactance of square tubular conductors. 206
- Higuchi, S.  
Stresses in a semi-infinite strip under the forces applied at its end. 62  
Method of solving two dimensional elastic problems and its applications. 63
- Higuchi, S. and Iinuma, K.  
Figures and tables for displacement, bending moment and shearing forces of a cantilever at the time of stationary oscillation. 62
- Hildebrand, F. B.  
Integro-differential equation of a problem in the theory of plane stress. 84
- Hildebrandt, T. H.  
Abel-Dini theorem. 79
- Hille, E.  
Representation of one-parameter semi-groups of linear transformations. 13  
On the oscillation of differential transforms. II. Characteristic series of boundary value problems. 97  
Analytical theory of semi-groups. 163  
Gelfond's solution of Hilbert's seventh problem. 191
- Hille, E. and Szegő, G.  
On the complex zeros of the Bessel functions. 274
- Hillman, A. See Lowan, A. N.
- Himpan, J. See Picht, J.
- Hinrichsen, J. J. L.  
The libration points in an  $n$ -body problem. 227
- Hjelmslev, J.  
Géométrie sensible. II. 166
- Hnatek, A.  
Über die Ermittlung der Randverdunkelung bei Bedeckungsveränderlichen. II. 260
- Hochschild, G.  
Semi-simple algebras and generalized derivations. 71
- Höcker, K. H.  
Wirkungsquerschnitte der Reaktionen zwischen Neutronen und Deuteronen. 291
- Hodge, W. V. D.  
Intersection formulae for a Grassmannian variety. 52  
Some enumerative results in the theory of forms. 184
- Hoel, P. G.  
On indices of dispersion. 280
- Hoff, N. J.  
Stresses in space-curved rings reinforcing the edges of cut-outs in monocoque fuselages. 232
- Hohenberg, F.  
Über die Kegelschnitte mit gemeinsamen Hauptachsen. 252
- Højland, E.  
Stability of the circular vortex. 60
- Holmes, M. C.  
An outline of probability and its uses. 102
- Holzinger, K. J. and Harman, H. H.  
Factor analysis. A synthesis of factorial methods. 18
- Hooke, R.  
Linear  $p$ -adic groups and their Lie algebras. 134
- Hopf, H.  
Nachtrag zu der Arbeit Fundamentalgruppe und zweite Bettische Gruppe. 173  
Maximale Toröide und singuläre Elemente in geschlossenen Lieschen Gruppen. 173
- Hopf, H. and Samelson, H.  
Satz über die Wirkungsräume geschlossener Liescher Gruppen. 3
- Horenstein, W. See Lowan, A. N.
- Hornich, H.  
Ergänzung und Berichtigung zu meiner Arbeit: "Über eine Zusammensetzung von Mengen." 4
- Hotelling, H.  
Some new methods in matrix calculation. 202
- Householder, A. S.  
Cellular forms: the tri-axial cell. I. 202
- Houstoun, R. A.  
Note on Einstein's theory of gravitation. 117
- Hsiung, C.-C.  
Asymptotic ruled surfaces. 257
- Hsu, C.-P.  
Transmission theory of a cylindrical hollow tube guide. 93  
Transmission theory of concentric lines. 93
- Hua, L.  
Least primitive root of a prime. 130  
Least solution of Pell's equation. 130  
The lattice-points in a circle. 190
- Hughes, H. K. (Cf. Fry, C. G.)  
On a theorem of Newsom. 214
- Hughes, J. M. See Cornock, A. F.
- Humbert, P.  
Fonctions  $K$  de Bessel. 81
- Hutner, R. A. See Stratton, J. A.
- Hyslop, J. M.  
Infinite series. 193
- Iinuma, K. See Higuchi, S.
- Ince, E. L.  
Simultaneous linear partial differential equations of the second order. 43
- Infeld, L.  
A generalization of the factorization method for solving eigenvalue problems. 144
- Ionescu, D. V.  
Sur une configuration de six points attachée à un tétraèdre coupé par trois plans parallèles à une face. 110
- Irwin, J. O.  
On the distribution of a weighted estimate of variance and on analysis of variance in certain cases of unequal weighting. 106
- Ishlinsky, A. J.  
Plane deformation when hardening takes place according to the linear law. 180
- Ives, H. E.  
Impact of a wave-packet and a reflecting particle. 235
- Ivins, W. M., Jr.  
Two first editions of Desargues. 181  
A note on Girard Desargues. 181

- Iyengar, K. S. K.  
Exact solution of the equations of the general cascade theory with collision loss. 30  
Notes on summability. I. An equivalence theorem in a general field of summability. 194
- Iyengar, K. V.  
A deepening of the binomial inequality. 135  
A note on Poncelet's problem. 166
- Iyer, V. Ganapathy. See Ganapathy Iyer.
- Jackson, D.  
Generalization of a theorem of Korovkin on the bounds of orthonormal polynomials. 41  
The instantaneous motion of a rigid body. 116  
Legendre functions of the second kind and related functions. 274
- Jackson, F. H.  
On basic double hypergeometric functions. 141
- Jacob, C.  
Sur un problème au contour de la théorie des marées. 119
- Jacobson, N.  
Classes of restricted Lie algebras of characteristic  $p$ . II. 187
- Jaekel, K.  
Zur Theorie der tragenden Linie im Instationären. 120
- Jaeger, J. C.  
Radial heat flow in circular cylinders with a general boundary condition. II. 46  
Heat conduction in a wedge, or an infinite cylinder whose cross-section is a circle or a sector of a circle. 46  
Heat flow in the region bounded internally by a circular cylinder. 144  
The energy loss by radiation of fast electrons in a Coulomb field. 207
- Jaeger, J. C. and Clarke, M.  
A short table of  $\int_0^\infty (e^{-u^2} (J_0^2(u) + Y_0^2(u))) (du/u)$ . 148
- Jaffé, G.  
A statistical theory of liquids. I. 208
- Jahnke, E. and Emde, F.  
Tables of functions with formulae and curves. 281, 340
- James, G. and James, R. C.  
Mathematics dictionary. 193
- James, R. C. (Cf. James, G.)  
Linearly arc-wise connected topological Abelian groups. 224
- James, R. D.  
On the sieve method of Viggo Brun. 265
- James, R. D. and Weyl, H.  
Elementary note on prime number problems of Vinogradoff's type. 35
- Jauch, J. M.  
Meson theory of the magnetic moment of proton and neutron. 235
- Jeffery, R. L.  
Perron integrals. 75
- Jeffery, R. L. and Ellis, H. W.  
Cesàro totalization. 154
- Jeffreys, H.  
Asymptotic solutions of linear differential equations. 43  
Probability and quantum theory. 103  
Significance tests for the introduction of new functions to represent measures. 107  
Derivation of the tidal equations. 229  
On pulses whose travel times are not true minima. 233
- Jeming, J.  
Estimates of average service life and life expectancies and the standard deviation of such estimates. 281
- Jennings, S. A.  
Central chains of ideals in an associative ring. 69
- John, F.  
An inequality for convex bodies. 252  
Linear partial differential equations with analytic coefficients. 279
- Johnson, R. P.  
Conical roulettes. 167
- Jones, F. B.  
Measure and other properties of a Hamel basis. 4
- Jones, H. L.  
The use of grouped measurements. 221
- Jouguet, M.  
Sur les oscillations électromagnétiques naturelles d'une cavité ellipsoïdale. 151
- Juan, R. San. See San Juan.
- Julia, G.  
Sur les projecteurs de l'espace hilbertien ou unitaire. 163  
Sur la représentation analytique des opérateurs linéaires dans l'espace hilbertien. 163  
Représentation paramétrique bornée des opérateurs linéaires non bornés de l'espace hilbertien. 163
- Jung, F.  
Die Feldableitung. 268
- Kabakcioğlu, T. Okyay. See Okyay Kabakcioğlu.
- Kac, M.  
Note on the partial sums of the exponential series. 194  
On the average number of real roots of a random algebraic equation. 196
- Kachanov, L. M.  
Variation principles for plastic-elastic solids. 180, 340  
Plastic-elastic state of solids. 232
- Kakutani, S. (Cf. Erdős, P.)  
Representation of measurable flows in Euclidean 3-space. 14  
A proof that there exists a circumscribing cube around any bounded closed convex set in  $R^3$ . 111  
An extremum problem in product measure. 154
- Kalinin, N. K. See Riesenkampf, B. K.
- Kalinske, A. A.  
Turbulence and the transport of sand and silt by wind. 229
- Kaloujnine, L.  
Sur la théorie de Galois des corps non galoisiens séparables. 130
- Kalustyan, H.  
Représentation conforme et mouvement d'un plan sur un plan. 241
- Kamke, E.  
Über die definiten selbstadjungierten Eigenwertaufgaben bei gewöhnlichen linearen Differentialgleichungen. IV. 277
- Kantorovitch, L. V.  
Application of Galerkin's method to the so-called procedure of reduction to ordinary differential equations. 203
- Kantz, G.  
Über die Auflösung der Gleichung:  $\phi(x) = n$ , wenn  $\phi(m)$  die Anzahl derjenigen natürlichen Zahlen bezeichnet, welche relativ prim zur natürlichen Zahl  $m$  und kleiner als  $m$  sind. 265
- Kaplansky, I.  
A characterization of the normal distribution. 279
- Kaplansky, I. and Schilling, O. F. G.  
Relatively complete fields. 71
- Kappus, R.  
Graphische Lösung der Differentialgleichung  $Y''' + \phi(x) \cdot Y = f(x)$  bei beliebigen Anfangs- und Randbedingungen. 283
- von Kármán, T.  
Problems of flow in compressible fluids. 59  
Isaac Newton and aerodynamics. 65
- von Kármán, T. and Tsien, H.-S.  
Buckling of thin cylindrical shells under axial compression. 63
- Karpinski, L. C.  
Supplement to the bibliography of mathematical works printed in America through 1850. 181
- Kársna, A.  
System der einmodigen Häufigkeitskurven. 19



- Kasner, E.  
 Differential equations of the type:  $y''' = Gy'' + Hy'^2$ . 54  
 Differential equations of the type  $y^{iv} = Ay'''^2 + By''' + C$ . 198  
 Note on non-Apollonian packing in space. 252
- Kasner, E., Comenetz, G. and Wilkes, J.  
 The covering of the plane by circles. 252
- Kasner, E. and DeCicco, J.  
 Synthetic solution of the inverse problem of dynamics. 54  
 The geometry of velocity systems. 226
- Katterbach, K.  
 Messen der Krümmung flacher Kurven. 92
- Keller, E. G.  
 Mathematics of modern engineering. Vol. II. Mathematical engineering. 150
- Kemble, E. C.  
 Is the frequency theory of probability adequate for all scientific purposes? 16
- Kendall, D. G.  
 A summation formula associated with finite trigonometric integrals. 157
- Kendall, J. M. See Born, W. T.
- Kendall, M. G.  
 Partial rank correlation. 22  
 Seminvariant statistics. 104  
 Note on the estimation of a ranking. 107
- Kenney, J. F.  
 Characteristic functions in statistics. 103
- Kerawala, S. M.  
 Enumeration of the Latin rectangle of depth three by means of a difference equation. 69
- de Kerékjártó, B.  
 Groupes compacts de transformations topologiques des surfaces. 3
- Kershner, R.  
 The continuity of functions of many variables. 153
- Kesava Menon, P.  
 The evaluation of certain determinants. 128  
 Some congruence theorems. 188
- Keulegan, G. H.  
 Equation of motion for the steady mean flow of water in open channels. 59
- Keulegan, G. H. and Patterson, G. W.  
 Effect of turbulence and channel slope on translation waves. 262
- Khintchine, A.  
 Lois de distribution des fonctions sommatoires dans la mécanique statistique. 208
- Kiang, S.  
 Fouriersche Entwicklung der singulären Funktion bei einer Lebesgueschen Zerlegung. 37
- Kiang, T.  
 Remarks on two-leaved orientable covering manifolds of closed manifolds. 224
- Kibble, W. F.  
 Two-variate gamma type distribution. 103
- Kienle, H.  
 Das Weltsystem des Kopernikus und das Weltbild unserer Zeit. 181
- Kilchevsky, N. A.  
 On axial-symmetric deformations and elastic stability of circular tubes under the action of longitudinal compressing forces. 231
- Kimball, B. F.  
 Limited type of primary probability distribution applied to annual maximum flood flows. 29  
 General theory of plant account subject to constant mortality law of retirements. 109
- Kimball, W. S.  
 The special form of Coriolis' compound centripetal acceleration due to the rotating earth. 116
- Kimball, W. S. (Continued)  
 The path equation for motion on the surface of the rotating earth in a uniform parallel field of force with initial velocity along the field. 225
- Kishen, K. (Cf. Bose, R. C.)  
 Symmetrical unequal block arrangements. 108  
 Simplified method of expressing the components of the second order interaction in a  $3^2$  factorial design. 108  
 On expressing any single degree of freedom for treatments in an  $s^m$  factorial arrangement in terms of its sets for main effects and interactions. 281
- Kleene, S. C.  
 Recursive predicates and quantifiers. 126
- Klein-Barmen, F.  
 Molekulare Verbände. 69
- Kneser, H.  
 Zur Stetigkeit der Wurzeln einer algebraischen Gleichung. 273
- Knie, G.  
 Wave mechanics in a curved space. 31
- Knudsen, L. F.  
 A punched card technique to obtain coefficients of orthogonal polynomials. 92
- Kober, H.  
 Hilbert's operator. 40  
 A note on approximation by rational functions. 242  
 On the approximation to integrable functions by integral functions. 271
- Kochin, N. E.  
 On the steady oscillations of an aerofoil of round shape in plane. 228
- Kochin, N. E. and Loytzensky, L. G.  
 An approximate method of calculating the laminar boundary layer. 227
- Kochina, P. J. Polubarinova-. See Polubarinova-Kochina.
- Kofink, W. and Menzer, E.  
 Reflexion elektromagnetischer Wellen an einer inhomogenen Schicht nach der Wentzel-Kramers-Brillouin-Methode. 93
- Kohler, M.  
 Schallabsorption in Mischungen einatomiger Gase. 29
- Kolchin, E. R.  
 Extensions of differential fields. I. 72
- Kolmogoroff, A.  
 Confidence limits for an unknown distribution function. 25  
 Sur l'estimation statistique des paramètres de la loi de Gauss. 221
- Kolscher, M.  
 Unstetige Strömungen mit endlichem Totwasser. 59
- König, H.  
 Die Ähnlichkeitsgesetze des elektromagnetischen Feldes und ihre Anwendung auf Elektronenröhren. 289
- Kontorovitch, M. I. See Grünberg, G. A.
- Koopmans, T.  
 Serial correlation and quadratic forms in normal variables. 22
- Kopal, Z.  
 Theoretical light curves of close eclipsing systems. I, II. 73  
 Calculation of rotation factors for eclipsing binary systems. 73
- v. Koppenfels, W.  
 Bemerkungen zu der Arbeit von E. Graeser: Konforme Abbildung der längs eines beliebigen Kegelschnittbogens aufgeschlitzten Ebene auf das Äußere eines Kreises. 271
- Korenev, B. G.  
 On the application of compensating loads. 180
- Korff, G.  
 Ein Ausgleichsverfahren für die Koeffizientenbestimmung in der Potenzreihenentwicklung der sphärischen Aberration. 284
- Kormes, M.  
 A note on the integration of linear second-order differential equations by means of punched cards. 284

- Kosambi, D. D.  
Zeros and closure of orthogonal functions. 39  
Test of significance for multiple observations. 107  
Valid tests of linguistic hypotheses. 109
- Kostitzin, V. A.  
Sur l'équation de la chaleur dans le cas d'une sphère stratifiée avec des sources distribuées sur les surfaces de discontinuité. 144  
Sur l'équation généralisée de la chaleur dans le cas d'une sphère. 145
- Kothari, D. S. See Bhatnagar, P. L.
- Kotschina, P. J. Polubarinova-. See Polubarinova-Kochina.
- Kowalewski, G.  
Über das neue Theorem von Obreschkoff. 273
- Koyenuma, N.  
Beiträge zur Theorie der biologischen Strahlenwirkung. 201
- Kozakiewicz, W.  
Convergence presque certaine. 16
- Krafft, M.  
Eulersches Verfahren zur Wurzelberechnung. 90
- Kravtchenko, J.  
Problème de représentation conforme de Helmholtz; théorie des sillages et des poutres. (Conclusion) 58  
Sur le problème de représentation conforme de Helmholtz. 175
- Krienes, K. and Schade, T.  
Theorie der schwingenden kreisförmigen Tragfläche auf potentialtheoretischer Grundlage. II. Numerischer Teil. 177
- Krishnan, V. S.  
The problem of the last-residue-class in the distributive lattice. 129
- Krogdahl, W. (Cf. Chandrasekhar, S.)  
Equilibrium of a perfect compressible fluid configuration. 58
- Kron, G.  
Short course in tensor analysis for electrical engineers. 29  
Equivalent circuits for oscillating systems and the Riemann-Christoffel curvature tensor. 151
- Kronsbein, J.  
Analytical expressions for some extremal schlicht functions. 215
- Kryloff, N. and Bogoliuboff, N.  
Introduction to non-linear mechanics. 142
- Kucharski, W.  
Unstetigkeitsstellen in einem bewegten Kontinuum. 61
- Kurosh, A.  
Direct decompositions of simple rings. 238
- Kuznetsov, E. S.  
Scattering of light in a medium bordering on a reflecting wall with given albedo. 161  
Contribution to the problem of calculation of the field of radiation in an absorbing and scattering atmosphere for a given temperature distribution. 161  
Conditions for heat flows on the boundary surface of two media, radiating heat transfer being taken into account. 199
- Kwesselawa, D. A. (Cf. Vecoua, N. P.)  
Zur Theorie der konformen Abbildungen. 77
- Labra, M.  
Generalization of Stewart's theorem. Application to the computation of the sides of important pedal triangles. 51  
Computation of the sides of important pedal triangles. 252
- Laden, H. N.  
Fundamental polynomials of Lagrange interpolation and coefficients of mechanical quadrature. 196
- Lahaye, E.  
Représentation des racines des équations algébriques. 41  
Application de la méthode des approximations successives à la résolution des équations aux dérivées partielles linéaires du second ordre. 44
- Lamb, W. E., Jr. See Nordsieck, A.
- Lammel, E.  
Interpolationsproblem im Einheitskreise meromorpher Funktionen. I. 10  
Approximation meromorpher Funktionen durch rationale Funktionen. 10
- Lanczos, C.  
Matter waves and electricity. 56
- Landahl, H. D.  
Equilibrium shapes in non-uniform fields of concentration. 202
- Landers, A. W., Jr.  
Invariant multiple integrals in the calculus of variations. 46
- Landers, M. K.  
Hamilton-Jacobi theory for the problems of Bolza and Mayer. 47
- Lane, E. P.  
Treatise on projective differential geometry. 114
- Lang, K.  
Analysis of net premium formulas for the income endowment policy. 28
- Lange, O.  
Theoretical derivation of elasticities of demand and supply: the direct method. 109
- Langer, R. E.  
A theory for ordinary differential boundary problems of the second order and of the highly irregular type. 198  
What are Eigenwerte? 198
- Langevin, P.  
Sur les chocs entre neutrons rapides et noyaux de masse quelconque. 236
- Lapauri, I. D.  
On numerical integration of differential equations of hyperbolic type. 91
- v. Laue, M.  
Bemerkungen zur Supraleitung. 290  
Nochmals über Stromverteilung in Supraleitern. 290
- Laval, J.  
Composition des rayons X diffusés par un cristal perturbé par l'agitation thermique. 290  
La diffusion cristalline des rayons X peut être envisagée comme résultant de réflexions de Bragg, avec changement de fréquence, sur les plans d'ondes d'agitation thermique. 290
- Lawley, D. N.  
On problems connected with item selection and test construction. 222
- Lebedev, N. N. See Grünberg, G. A.
- Lebesgue, H.  
Fonction continue sans dérivée. 74
- Ledermann, W. See Born, M.
- Lee, H. L.  
Power sums of polynomials in a Galois field. 238
- Lefschetz, S.  
Algebraic topology. 84  
Topics in topology. 86  
Existence of periodic solutions for certain differential equations. 142
- Lehmer, D. H.  
Recurrence formulas for certain divisor functions. 188
- Leibenson, L.  
Bewegung einer gashaltigen Flüssigkeit in einem porösen Mittel. 101
- Leibler, R. A. See Doob, J. L.
- Leighton, W. See Bankier, J. D.; Glass, T. F.
- Leighton, W. and Thron, W. J.  
On value regions of continued fractions. 81  
Continued fractions with complex elements. 195  
On the convergence of continued fractions to meromorphic functions. 195
- Lekhnitsky, S. G.  
Equilibrium of an anisotropic cantilever beam. 180



- Lelong, P.  
Sur certaines fonctions multiformes. 138
- Lense, J.  
Bemerkung zu meinem Aufsatz "Die sphärische Trigonometrie in der sphärischen Astronomie." 252
- Leonov, M. J.  
Properties of Green's spacial functions. 277
- Lepage, T.  
Champs géodésiques des intégrales multiples. 143
- Lepecki, Z.  
On some theorems on trigonometric double series. 157
- Leser, C. E. V.  
Inequalities for multivariate frequency distributions. 16  
The consumer's demand for money. 281
- Levenson, A. See Lowan, A. N.
- Levi, B.  
Definition and conditions for the existence of the tangent and the osculating circle at a point of a curve. 54  
The postulate of Archimedes. From Euclid to Galileo: modern concepts. 65  
Obituary: Tullio Levi-Civita (1873-1941). 66  
Inversion of a definite integral. 98  
Integral transformation. 98  
Methods of attack in logic. 127  
Brief comment. 257  
On the approximate solution of transcendental equations represented by Taylor series. 282
- Levi, F. W.  
Number of generators of a free product, and a lemma of A. Kurosch. 2  
Finite geometrical systems. 49  
Algebra. Vol. I. 66  
Groups in which the commutator operation satisfies certain algebraic conditions. 133  
Ordered groups. 192
- Levi, H.  
A characterization of polynomial rings by means of order relations. 185
- Levin, J. H.  
Minima of double integrals with respect to unilateral variations and applications to subharmonic functions. 47
- Levinson, N. See Boas, M. L.
- Levinson, N. and Smith, O. K.  
General equation for relaxation oscillations. 42
- Levitzki, J.  
On the radical of a general ring. 238
- Lévy, P.  
Théorème fondamental de la théorie des jacobiens. 73  
Détermination expérimentale de la loi des erreurs. 103
- Levy, S.  
Buckling of rectangular plates with built-in edges. 230
- Lewis, F. A.  
Generators of permutation groups simply isomorphic with  $LP(2, p^n)$ . 191
- Lichnerowicz, A.  
Sur une généralisation des espaces de Finaler. 226
- Lidstone, G. J.  
Poisson frequency distribution. 20
- Lifshitz, E. M.  
On the theory of phase transitions of the second order. I, II. 206, 291  
Optical behaviour of non-ideal crystalline lattices in the infra-red region. I, II, III. 236
- Lifshitz, J.  
Fourier analysis of orbits in the equatorial plane of a magnetic dipole. 94  
On the stability of principal periodic orbits in the theory of primary cosmic rays. 227
- Lijn, G. Van der. See Van der Lijn.
- Lin, C. C. (Cf. Synge, J. L.)  
On the motion of a pendulum in a turbulent fluid. 227  
On the motion of vortices in two dimensions. 261
- Linés Escardó, E.  
Measure of a set transformed from another of given measure. 75
- Linnik, U. V.  
On Erdős's theorem on the addition of numerical sequences. 131  
A remark on the least quadratic non-residue. 189  
On Weyl's sums. 211  
New estimations of Weyl's sums by the method due to Vinogradov. 211  
On the representation of large numbers as sums of seven cubes. 211  
On a sequence which does not form the binary basis. 241
- Lipka, S.  
Abzählung der reellen Wurzeln von algebraischen Gleichungen. 41
- Littlewood, J. E. See Hardy, G. H.
- Longtin, B. See Randall, M.
- Longtin, B. and Randall, M.  
Intuitive and descriptive geometry of function space: Metric properties and transformation of coordinates. 12  
Intuitive and descriptive geometry of function space: Tensors and bi-vectors. 12
- Lonseth, A. T.  
Problem of Plateau in hyperbolic space. 49  
Systems of linear equations with coefficients subject to error. 90
- Loo, C. T.  
The absolute summability of power series and Fourier series. 244
- Loomis, L. H.  
The converse of the Fatou theorem for positive harmonic functions. 199
- Loomis, L. H. and Widder, D. V.  
Poisson integral representation of functions which are positive and harmonic in a half-plane. 101
- Loong, C.-H.  
Analog of the triangle geometry in the Kasner plane. 51
- Lorch, E. R.  
Spectrum of linear transformations. 247
- Loria, G.  
"Courbe catoptrique" d'Euler. 65  
Perfectionnements, évolution, métamorphoses du concept de "coordonnées." Contribution à l'histoire de la géométrie analytique. 65
- de Losada y Puga, C.  
Galileo. 181
- Lotka, A. J.  
Progeny of an entire population. 28
- Lowan, A. N. and Abramowitz, M.  
Table of the integrals  $\int_0^x J_0(t)dt$  and  $\int_0^x Y_0(t)dt$ . 282
- Lowan, A. N., Blanch, G. and Horenstein, W.  
Inversion of the  $q$ -series associated with Jacobian elliptic functions. 90
- Lowan, A. N., Davids, N. and Levenson, A.  
Table of the zeros of the Legendre polynomials of order 1-16 and the weight coefficients for Gauss' mechanical quadrature formula. 90
- Lowan, A. N. and Horenstein, W.  
On the function  $H(m, a, x) = \exp(-ix)F(m+1-ia, 2m+2; 2ix)$ . 197
- Lowan, A. N., Salzer, H. E. and Hillman, A.  
A table of coefficients for numerical differentiation. 148
- Loytzensky, L. G. (Cf. Kochin, N. E.)  
Resistance to motion through a liquid of a body surrounded by a layer of a fluid whose physical constants differ from those of the liquid. 119  
On integral methods in the theory of the boundary layer. 120  
Approximate method for calculating the laminar boundary on the airfoil. 120  
Laminar boundary layer on a body of revolution. 176

- Lubelski, S.  
Zwei Wegnersche Sätze. 67
- Lucas, R.  
Pression osmotique et diffusion. 207
- Lukacs, E.  
Characterization of the normal distribution. 16
- Luntz, G.  
Sur quelques généralisations des séries de Dirichlet. 218
- Lyche, R. Tambs. See Tambs Lyche.
- Lyons, T. C. See Guilford, J. P.
- MacColl, L. A.  
The fundamental equations of electron motion. Dynamics of high speed particles. 286
- McCrea, W. H.  
Analytical geometry of three dimensions. 250
- MacDuffee, C. C.  
Products and norms of ideals. 70  
What is a matrix? 237
- MacLane, S. See Eilenberg, S.
- MacLane, S. and Schilling, O. F. G.  
Groups of algebras over an algebraic number field. 187
- MacRobert, T. M.  
Some integrals involving  $E$ -functions and confluent hypergeometric functions. 83  
Associated Legendre functions of the first kind when the sum of the degree and the order is a positive integer. 274  
Proofs of some formulae for the hypergeometric function and the  $E$ -function. 274
- McShane, E. J.  
Theory of relative extrema. 48  
Sufficient conditions for a weak relative minimum in the problem of Bolza. 48  
Perron integration. 75
- McVittie, G. C.  
Axiomatic treatment of kinematical relativity. 174
- Ma, S. T. and Yu, F. C.  
Electromagnetic properties of nuclei in the meson theory. 95
- Maa, D.-Y.  
A general reactance theorem for electrical, mechanical, and acoustical systems. 289
- Macewan, D. and Beevers, C. A.  
A machine for the rapid summation of Fourier series. 91
- Mächler, W.  
On a property of real conic sections with center. 166
- Macintyre, A. J. and Wilson, R.  
Converses of Fabry's theorem. 7  
The logarithmic derivatives and flat regions of analytic functions. 216
- Mackey, G. W.  
Isomorphisms of normed linear spaces. 12
- Madhava Rao, B. S.  
Commutation rules for matrices related to particles of higher spins. 31  
Commutation rules related to particles of spins half and one. 95
- Magnus, W.  
Beugung elektromagnetischer Wellen an einer Halbebene. 32
- Magnusson, P. C.  
A numerical method of solving integral equations in two independent variables. 203
- Maharam, D.  
Measure in abstract sets. 11  
Homogeneous measure algebras. 12
- Mahler, K.  
Ternary Diophantine equations. 34  
On ideals in the Cayley-Dickson algebra. 185  
Note on lattice points in star domains. 212
- Majid Mian, A. See Chapman, S.
- Makai, E.  
Asymptotische Abschätzung der Eigenwerte gewisser Differentialgleichungen zweiter Ordnung. 43
- Maker, P. T.  
The Cauchy theorem for functions on closed sets. 136
- Malavard, L.  
Relations de réciprocité dans la théorie de l'aile portante. 177
- Malcev, A.  
On the representation of an algebra as a direct sum of the radical and a semi-simple subalgebra. 130  
Subgroups of Lie groups in the large. 135  
On the simple connectedness of invariant subgroups of Lie groups. 135  
On the structure of Lie groups in the large. 267
- Malkin, I. G.  
On a generalization of Kirchhoff's theory of transversal plate vibrations in the vibration problem of steam turbine disks. 121  
Basic theorems of the theory of stability of motion. 225
- Malkin, N.  
Conditions for use of Stokes' formula in determining the earth figure from observations on gravity. 102
- Malti, M. G. and Golomb, M.  
Electric propagation on long lines terminated by lumped networks. I, II. 205
- Mammana, G.  
Autofunzioni relative a sistemi differenziali contenenti una condizione quadratica in due punti. 43  
Minimo assoluto in taluni classici problemi di calcolo delle variazioni. I, II. 200
- Mandan, R.  
Properties of mutually self-polar tetrahedra. 111
- Mandelbrojt, S.  
Quasi-analyticity and properties of flatness of entire functions. 155
- Mandelbrojt, S. and Ulrich, F. E.  
Generalization of the problem of quasi-analyticity. 72
- Manel, B.  
The conformal mapping of multiply-connected domains on the basis of Plateau's problem. 217
- Mann, H. B.  
Proof of the fundamental theorem on the density of sums of sets of positive integers. 35  
The construction of orthogonal Latin squares. 184, 340
- Mann, H. B. and Wald, A.  
Choice of the number of class intervals in the application of the chi square test. 105
- Manning, R.  
On the derivatives of the sections of bounded power series. 76
- Mansfield, R.  
Differential systems involving  $k$ -point boundary conditions. 200
- March, A.  
Ganzzahligkeit in Raum und Zeit. IV. 96  
Raum, Zeit und Naturgesetze. 96, 234
- Marcinkiewicz, J. See Bergman, S.
- Marden, M.  
The zeros of certain composite polynomials. 196
- Margenau, H. and Murphy, G. M.  
The mathematics of physics and chemistry. 268
- Martin, D.  
On the methods of extending Dirac's equation of the electron to general relativity. 207
- Martin, M. H.  
The restricted problem of three bodies. 117  
The rectilinear motion of a gas. 278
- Martin, R. M.  
A homogeneous system for formal logic. 182
- Martinelli, E.  
Sulla immagine proiettiva delle serie e dei sistemi d'equivalenza elementari sopra una varietà. 168
- Maruhn, K.  
Zur eindeutigen Lösbarkeit der potentialtheoretischen Randwertaufgaben bei nichtbeschränkten Randwerten. 277

- Maseda, M. A. See Badell, E.
- Massera, J. L.  
Formulae for finite differences with applications to the approximate integration of differential equations of first order. 283
- Mattioli, G. D.  
Theory of heat transfer in smooth and rough pipes. 145
- Matsumura, S.  
Geometrie der Kreise und Kugeln. XXXIII-XLI. Flächen und Kurven. XXII, XXIII. Bemerkungen über die Theorie der konvexen Flächen und Kurven. 53  
Flächen und Kurven. XXIV, XXV. Bemerkungen über Eilinen und Eiflächen. 111
- Maximoff, I.  
Fonctions dérivées. 5  
On the continuum hypothesis. 213  
On functions of class 1 having the property of Darboux. 213  
On neighbouring roots. 273
- Mayer, A. E.  
A mean value theorem concerning Farey series. 194  
On neighbours of higher degree in Farey series. 194
- Mayer, J. E.  
Contribution to statistical mechanics. 96
- Mayer, W. and Campbell, A. D.  
Generalized homology groups. 225
- Meincke, H.  
Annäherung der logarithmischen Spirale durch Kreisbogen. 284  
Die Eigenwellen des belasteten zylindrischen Hohlraums. 288
- Meixner, J.  
Umformung gewisser Reihen, deren Glieder Produkte hypergeometrischer Funktionen sind. 275
- Mendonça, P. de Varennes e. See Varennes e Mendonça.
- Menger, K.  
What is dimension? 147  
Statistical metrics. 163
- Menon, P. Kesava. See Kesava Menon.
- Menzer, E. See Kofink, W.
- Mercier, A.  
Beziehungen zwischen den Clifford'schen Zahlen und den Spinoren. 71
- Merrington, M.  
Table of percentage points of the  $t$ -distribution. 23
- Mersman, W. A.  
Heat conduction in a semi-infinite slab. 46  
Heat conduction in an infinite composite solid with an interface resistance. 160
- Mian, A. Majid. See Majid Mian.
- Mickle, E. J.  
Associated double integral variation problems. 49
- Middleton, D.  
Ultra-high frequency oscillations of cylindrical cavity resonators containing two and three dielectric media. 288
- Mieghem, J. Van. See Van Mieghem.
- Mikeladze, S.  
Über dividierte Differenzen mit wiederholten Argumentwerten. 91
- Milgram, A. N. (Cf. Artin, E.)  
Some topologically invariant metric properties. 249
- Miller, G. A.  
Maximal Sylow subgroups of a given group. 1  
Direct products of the groups of self-isometries. 1  
Deductions from Frobenius's theorem. 1  
Fourth lesson in the history of mathematics. 65  
Automorphisms of the dihedral groups. 133, 340  
Permutation groups of a general degree. 133  
A fifth lesson in the history of mathematics. 181  
Determination of the subgroups of small index. 191  
Possible groups of automorphisms. 191  
Groups containing a prime number of conjugate subgroups. 191
- Miller, G. A. (Continued)  
Groups containing four and only four non-invariant subgroups. 266
- Miller, H.  
An analytical method for determining the flexibility of piping having two or more anchorages. 124
- Miller, J. C. See Bickley, W. G.
- Millončikov, M.  
Theory of homogeneous isotropic turbulence. 121
- Millman, J.  
Laplacian transform analysis of circuits with linear lumped parameters. 94
- Millsaps, K.  
Abstract polynomials in non-Abelian groups. 218
- Milne, E. A.  
Rational electrodynamics. I-V. 226, 227, 285  
On the equation of motion of a free particle in the expanding universe of kinematical relativity. 286
- Milne-Thomson, L. M.  
Consistency equations for the stresses in isotropic elastic and plastic materials. 122
- Minakshisundaram, S.  
On expansion in eigenfunctions of boundary value problems. III. The summability problem. 246
- de Mira Fernandes, A.  
Condizione (N) di Lusin et condizioni (T) ed (S) di Banach. Condizione (S<sub>1</sub>) ed (S<sub>2</sub>). 75
- Miranda, M. Gonçalves. See Gonçalves Miranda.
- Mirguet, J.  
Classe de surfaces sans paratangent troisième. 55
- Miser, H. J.  
Regions and their "patterns" in conformal mapping. 9
- v. Mises, R.  
Correct use of Bayes' formula. 27
- Mital, P. C.  
Operational images of self-reciprocal functions. 99
- Mitra, A.  
Affine regularity of polygons. 51
- Mitra, S. C.  
On a certain transformation about generalised hypergeometric series. 141  
On an extension of a theorem of Watson in generalised hypergeometric series. 141
- Mohan, B.  
Pair of self-reciprocal functions. 40  
Infinite integrals involving Struve's functions. 82  
Properties of a certain confluent hyper-geometric function. 82  
A class of infinite integrals. II. 141  
Infinite integrals involving Struve's functions. III. 141
- Mohanty, R. N.  
Determination of the jump of a function by its Fourier series. 97
- Mohr, E.  
Navier-Stokes stress principle for viscous fluids. 59  
Bemerkung zur Kirchhoffschen Plattenströmung. 177  
Die Bernoullische Gleichung und die Allseitigkeit des Druckes. 177
- Mokrzycki, G. A.  
Graphic determination of distance in accelerated air-plane motion. 150  
The best turning of an aircraft. 229
- Molina, E. C.  
Poisson's exponential binomial limit. Table I: individual terms. Table II: cumulated terms. 18
- Molsen, K.  
Ein Beitrag zur Irreduzibilität in algebraischen Zahlkörpern. 266
- Monteiro, A.  
Notion de fermeture et axiomes de séparation. 87
- Monteiro, A. and Ribeiro, H.  
L'opération de fermeture et ses invariants dans les systèmes partiellement ordonnés. 223



- Montel, P.  
 Valeurs algébriques d'une fonction entière ou méromorphe. 7  
 Sur le nombre des combinaisons avec répétitions limitées. 184
- Montgomery, D. and Samelson, H.  
 Groups transitive on the  $n$ -dimensional torus. 250
- Montgomery, D. and Zippin, L.  
 Theorem on Lie groups. 3
- Moody, E. I.  
 Notes on the Bertini involution. 253
- Moore, G. H. and Wallis, W. A.  
 Time series significance tests based on signs of differences. 281
- Moore, R. L.  
 Concerning intersecting continua. 146  
 Concerning a continuum and its boundary. 146  
 Concerning domains whose boundaries are compact. 146
- Moorman, R. H.  
 The influence of mathematics on the philosophy of Descartes. 181
- de Moraes, A. and Schönberg, M.  
 Equation of dielectric media. 84
- Morales, M. F. See Shock, N. W.
- Moran, P. A. P.  
 The measure of plane sets. 153
- Mordell, L. J.  
 Product of three homogeneous linear ternary forms. 131  
 On sums of three cubes. 189  
 Note on cubic Diophantine equations  $s^2 = f(x, y)$  with an infinity of integral solutions. 265  
 On Ryley's solution of  $x^3 + y^3 + z^3 = n$ . 265
- Morozov, V. V.  
 On a nilpotent element in a semi-simple Lie algebra. 187  
 On the centralizer of a semi-simple subalgebra of a semi-simple Lie algebra. 187
- Morrey, C. B., Jr.  
 Correction to a previous paper. 5
- Morris, J.  
 Frequency equations. 90
- Morris, J. and Head, J. W.  
 Lagrangian frequency equations. 148
- Morse, A. P. See Federer, H.
- Morse, P. M. See Stratton, J. A.
- Moyal, J. E.  
 Approximate probability distribution functions for the sum of two independent variates. 19
- Muggli, H.  
 Differentialgleichungen unendlich hoher Ordnung. 100
- Muhly, H. T.  
 Valuations and infinitely near algebraic loci. 52
- Müller, E.  
 Rechteckige Platten, die an allen vier Seiten durch elastische Träger unterstützt sind. 123
- Müller, H. R. See Brauner, K.
- Müller, M.  
 Über die Existenz periodischer Lösungen bei gewissen Systemen gewöhnlicher Differentialgleichungen erster Ordnung. 275
- Murphy, G. M. See Margenau, H.
- Murti, V. Narasimha. See Narasimha Murti.
- Mushelišvili, N. I.  
 Application of integrals of Cauchy type to a class of singular integral equations. 160
- Myers, F. G.  
 Sufficiency conditions for the problem of Lagrange. 200
- Myklestad, N. O.  
 Two problems of thermal stress in the infinite solid. 123
- Nagabhushanam, K. (Cf. Sambasiva Rao, K.)  
 Infinitesimal automorphisms of the action form. 158
- Nagy, G. v. Sz. See Sz. Nagy.
- Nair, A. N. K.  
 Distribution of Student's " $t$ " and the correlation coefficient in samples from non-normal populations. 164  
 On the probability of obtaining  $k$  sets of consecutive successes in  $n$  trials. 248
- Nair, K. R. (Cf. Bose, R. C.)  
 Median in tests by randomization. 108  
 Method of "fitting of constants" for analysis of non-orthogonal data arranged in a double classification. 108  
 Application of the technique of analysis of covariance to field experiments with several missing or mixed-up plots. 108  
 Table of confidence interval for the median in samples from any continuous population. 165  
 Balanced confounded arrangements for the  $5^m$  type of experiment. 223  
 Efficiency of the adjustment for concomitant characters in biological experiments. 281
- Nair, K. R. and Shrivastava, M. P.  
 On a simple method of curve fitting. 279
- Nair, U. S.  
 Probability statements regarding the ratio of standard deviations and correlation coefficient in a bivariate normal population. 164  
 Comparison of tests for the significance of the difference between two variances. 222
- Nakano, H.  
 Unitäriinvarianten im allgemeinen Euklidischen Raum. 13
- Narasimha Murti, V.  
 A problem in combinations. 127
- Narayan, R. D. See Bhattacharyya, D. P.
- Nesbitt, C. J. See Thrall, R. M.
- Neugebauer, O.  
 Two astronomical passages in Plutarch's *De Animae Procreatione* in Timaeo. 65
- Neumann, B. H.  
 Remarks on polygons. 51
- von Neumann, J. (Cf. Chandrasekhar, S.; Halmos, P. R.; Hart, B. I.)  
 Distribution of the ratio of the mean square successive difference to the variance. 21  
 Further remark concerning the distribution of the ratio of the mean square successive difference to the variance. 22
- Neuschuler, L.  
 On double and triple term tables of functions of three variables. 202
- Newell, H. E., Jr.  
 Asymptotic forms of the solutions of an ordinary linear matrix differential equation in the complex domain. 99
- Newman, M. H. A.  
 Characterisation of Boolean lattices and rings. 70  
 Relatively complemented algebras. 70  
 Theories with a combinatorial definition of "equivalence." 126  
 Stratified systems of logic. 182  
 On a string problem of Dirac. 252
- Nicolai, E. L.  
 G. V. Tchikanov's paper "Theory and methods of calculating automatic regulators" printed in "Automatika and Telemekhanika." 116
- Nielsen, K. L. and Ramsay, B. P.  
 On particular solutions of linear partial differential equations. 159
- Niemytzki, V.  
 Intégration qualitative approximative du système d'équations  $dx/dt = Q(x, y)$ ,  $dy/dt = P(x, y)$ . 276
- Nikolsky, K.  
 On the theory of mesons. 291
- Niven, I.  
 Quadratic Diophantine equations in the rational and quadratic fields. 34

- Niven, I. (Continued)  
 Roots of a quaternion. 67  
 The Pell equation in quadratic fields. 240
- Nordhaus, E. A.  
 Problem of Bolza for double integrals in the calculus of variations. 46
- Nordsieck, A., Lamb, W. E., Jr. and Uhlenbeck, G. E.  
 On the theory of cosmic-ray showers. I. The Furry model and the fluctuation problem. 152
- Novoa, L. Gutiérrez. See Gutiérrez Novoa.
- Nowoschilow, W. W.  
 Einige Bemerkungen zur Theorie der Schalen. 124
- Nudelman, J. L.  
 On the theory of stability of ideal frames. 116
- Numerov, S. N.  
 Filtration without percolation and without infiltration or evaporation from the surfaces. 119
- Oberg, E. N.  
 On the approximation of functions by sums of orthonormal functions. 218
- Oblaski, J.  
 Über einige mathematische Instrumente mit einer Messrolle, deren Achse mit Gewinde versehen ist. 284
- Obnorski, S. P.  
 Boris Mikhailovich Liapounoff. 181
- Obuchow, A. M.  
 Energieverteilung im Spektrum des Turbulenzstromes. 121  
 Ueber die Verteilung des Turbulenzmasstabes in Strömen mit beliebigem Querschnitt. 121
- Ohlig, R.  
 Die achsensymmetrisch belastete dicke Kreisplatte. 264
- Okyay Kabakcioglu, T.  
 Verallgemeinerung und Anwendung der Wilkens'schen Theorie im Problem der mehrfachen Kommensurabilitäten. 259
- Oldenburger, R.  
 Expansions of quadratic forms. 184
- Olmsted, J. M. H.  
 Lebesgue theory on a Boolean algebra. 11
- Olsson, R. Gran. See Gran Olsson.
- Opatowski, I.  
 Inverse problem concerning a chain process. 17  
 Theory of brakes, an example of a theoretical study of wear. 64
- Ore, O.  
 Theory of equivalence relations. 128
- Ortusi, A. See Gutton, H.
- Ostrowski, A.  
 Classe de transformations différentielles dans l'espace à trois dimensions. II. 44
- Otchan, G.  
 Question liée au problème de Soulin. 4  
 Quelques questions de l'équivalence des familles d'ensembles. 153
- Oudart, A.  
 Théorie des sillages. Problème indéterminé de Levi-Civita et de M. Villat. 175
- Owens, G.  
 Explicit formula for the solution of the ultrahyperbolic equation in four independent variables. 45
- Ozorio de Almeida, M.  
 Maxima and minima of certain symmetric functions. 72
- Paatero, V.  
 Beschränkte Funktionen, welche gegebene Paare von Randbogen ineinander überführen. 9
- Pall, G.  
 Quaternions and sums of three squares. 34  
 On the product of linear forms. 189  
 The distribution of integers represented by binary quadratic forms. 240
- Pankajam, S.  
 On the formal structure of the propositional calculus. II. 125
- Panov, D. J.  
 On large deflections of slightly corrugated circular membranes. 231
- Papkowitsch, P. F.  
 Zwei Fragen zur Theorie der dünnen elastischen Platten. 230
- Pâquet, P. V.  
 Formes différentielles extérieures  $\Omega_n$  dans le calcul des variations. 49  
 Géométrie différentielle suivant la méthode de Grassmann et les intégrales du calcul des variations. 49
- Parkhomovsky, J.  
 On a method of approximate solution of the problem of torsion. 231
- Päslar, M.  
 Die Anwendung des Matrizenkalküls auf Probleme der HF-Technik. 289
- Pasquel, J. Tola. See Tola Pasquel.
- Pastor, J. Rey. See Rey Pastor.
- Patterson, A. L. and Tunell, G.  
 A method for the summation of the Fourier series used in the X-ray analysis of crystal structures. 91
- Patterson, G. W. See Keulegan, G. H.
- Patterson, J. O.  
 Diophantine problem of finding four biquadrates whose sum is a biquadrate. 33
- Pauli, W. See Einstein, A.
- Pauli, W. and Dancoff, S. M.  
 Pseudoscalar meson field with strong coupling. 95
- Paulson, E.  
 Approximate normalization of the analysis of variance distribution. 23  
 A note on the estimation of some mean values for a bivariate distribution. 280  
 A note on tolerance limits. 280
- Pavlov, A. T.  
 Steady flow of ground water consisting of two strata of different densities. 119
- Pearlman, Y. I.  
 Galerkin's method in calculus of variations and in the theory of elasticity. 203
- Pearson, E. S.  
 Probability integral of the range in samples of  $n$  observations from a normal population. I. Foreword and tables. 19  
 Testing statistical hypotheses. 26
- Pedersen, P.  
 Librationsellipsen um die Dreieckslibrationspunkte im allgemeinen Dreikörperproblem. 57
- Pedoe, D.  
 An inequality for two triangles. 168  
 On some geometrical inequalities. 168
- Peebles, G. H.  
 Equivalence of certain types of series of orthonormal functions. 39
- Peineke, H.  
 Fehlerbetrachtung zur Rinaldinischen Regel. 111
- Peiser, A. M.  
 Hagge circle of a triangle. 51  
 Asymptotic formulas for significance levels of certain distributions. 222  
 Covering mappings. 249
- Peiser, H. S. See Evans, R. C.
- Pekeris, C. L.  
 On T. E. W. Schumann's paper, "An investigation concerning G. I. Taylor's correlation coefficient of turbulence." 61
- Perlin, I. E.  
 Sufficient conditions that polynomials in several variables be positive. 41



- Perlis, S.  
 Normal bases of cyclic fields of prime-power degree. 71
- Peters, J.  
 Seven-place values of trigonometric functions for every thousandth of a degree. 89
- Petiau, G.  
 Sur un système de nombres hypercomplexes dérivés des nombres de Clifford. 67  
 Sur les équations d'ondes des corpuscules à spins entiers. 207
- Pflanz, E.  
 Druckverteilung unter belasteten Balken auf nachgiebiger Unterlage. 62
- Pflüger, A.  
 Spannungsverteilung in stabförmigen Membran-Kegelschalen. 124
- Pfriem, H.  
 Differenzenverfahren zur Berechnung zeitveränderlicher kugelsymmetrischer Temperaturfelder. 91
- Philippow, A. P.  
 Ein unendlich langer Balken, auf elastischem Halbraume liegend. 264
- Phillips, R. S. (Cf. Bochner, S.)  
 On weakly compact subsets of a Banach space. 218
- Piaggio, H. T. H.  
 The operational calculus. 275
- Pi' Calleja, P.  
 Intégrales singulières et leur application à la forme complexe de l'intégrale de Fourier. 40
- Piccard, S.  
 Bases du groupe symétrique. 1  
 Propositions concernant les bases du groupe symétrique et du groupe alterné. 133
- Picht, J. and Himpan, J.  
 Beiträge zur Theorie der elektrischen Ablenkung von Elektronenstrahlenbündeln. I, II, III. 289
- Pierce, J. A.  
 Correction formulas for moments of a grouped-distribution of discrete variates. 221
- Pillai, S. S.  
 Algebraic irrationals. 36  
 Problem in Diophantine approximation. 36  
 On the divisors of  $a^n + 1$ . 210  
 On a congruence property of the divisor function. 210  
 On  $\sigma_{-1}(n)$  and  $\phi(n)$ . 240  
 Lattice points in a right-angled triangle. II, III. 266
- Pincherle, L.  
 Eigenfunctions in Heisenberg approximation of the two-electrons problem. 30
- Pinl, M. See Behrbohm, H.
- Pinsker, A.  
 On a class of operations in  $K$ -spaces. 219
- Pipes, L. A.  
 Analysis of longitudinal motions of trains by electrical analog. 92  
 Operational theory of longitudinal impact. 92  
 Matrix theory of torsional oscillations. 122  
 Electrical circuit analysis of torsional oscillations. 288
- Pippard, A. J. S.  
 Geometrical derivation of formulas for laterally loaded struts. 64
- Pisot, C.  
 Ein Kriterium für die algebraischen Zahlen. 266  
 Über ganzwertige ganze Funktionen. 270
- Pitcher, E. and Smiley, M. F.  
 Transitivity of betweenness. 87
- Pitt, H. R.  
 General Mercerian theorems. II. 83  
 Some generalizations of the ergodic theorem. 219  
 Random processes in a group. 219
- Pitts, W.  
 A general theory of learning and conditioning. I. 201  
 The linear theory of neuron networks: the static problem. 202
- Platrier, C.  
 Au sujet des cisaillements superficiels d'un prisme. 180
- Podolsky, B.  
 Generalized electrodynamics. I. Non-quantum. 31
- Poivert, J.  
 Étude sur la pseudo-résolvante. 66
- Pollard, W. G.  
 Evaluation of surface integrals by electrical images. 74
- Polubarinova-Kochina, P. J.  
 Inflow of fluids to oil wells in a heterogeneous medium. 119  
 On filtration under hydrotechnical structures in a stratified medium. 178
- Pólya, G.  
 Converse gap theorems. 7  
 On the zeros of the derivatives of a function and its analytic character. 192
- Pólya, G. and Wiener, N.  
 Oscillation of the derivatives of a periodic function. 97
- Pompeiu, D.  
 Définitions de l'holomorphie et prolongement analytique. 76
- Pontrjagin, L.  
 Characteristic cycles on manifolds. 147  
 On zeros of some transcendental functions. 214  
 Mappings of the three-dimensional sphere into an  $n$ -dimensional complex. 249
- Poritsky, H.  
 Vortices in fluid flow. 261  
 Field concentration near circular conductors. 289
- Pösch, H. See Sauer, R.
- Pospíšil, B.  
 Verteilungen auf Booleschen Ringen. 11
- Post, E. L.  
 Formal reductions of the general combinatorial decision problem. 209
- Poulkine, S.  
 Sur l'itération des fonctions d'une variable indépendante. 213
- Prager, W.  
 Fundamental theorems of a new mathematical theory of plasticity. 61  
 A new mathematical theory of plasticity. 123
- Prager, W. and Hay, G. E.  
 On plane rigid frames loaded perpendicularly to their plane. 233
- Prenowitz, W.  
 Projective geometries as multigroups. 251
- Prescott, J.  
 Elastic waves and vibrations of thin rods. 121
- Privaloff, I.  
 Quelques applications de l'opérateur généralisé de Laplace. 246  
 Quelques remarques sur la théorie des fonctions subharmoniques. 278
- Proca, A.  
 Sur la théorie des particules matérielles et en particulier sur les électrons de spin  $\frac{1}{2}$ . 236
- Prokofiev, V.  
 Imbedding of two-dimensional spaces of normal projective connectivity into the three-dimensional projective space. 171
- Puga, C. de Losada y. See Losada y Puga.
- Pugachev, V. S.  
 Représentations asymptotiques des intégrales des systèmes d'équations linéaires contenant un paramètre. 43  
 Problem of exterior ballistics of bombs. 149  
 Notes on exterior ballistics of projectiles and bombs. 149  
 On the approximate solution of the general problem of exterior ballistics. 149  
 Evaluation of error of asymptotic representations of integrals of linear differential equations containing a parameter. 158

- Pugh, H. L. D. and Harris, A. J.  
Temperature distribution around a spherical hole in an infinite conducting medium. 46
- Quade, W.  
Ein neues Verfahren der schrittweisen Näherungen zur Lösung von  $y' = f(x, y)$ . 245
- Quine, W. V.  
On existence conditions for elements and classes. 183
- Rabe, E.  
Bemerkungen über die oskulierenden Elemente in der speziellen Störungsrechnung. 259
- Racine, C.  
Relativistic problem of  $n$  bodies. I, II. 56
- Rademacher, H.  
On the Bloch-Landau constant. 270
- Radhakrishna Rao, C.  
On the volume of a prismoid in  $n$ -space and some problems in continuous probability. 248
- Rado, R.  
A theorem on independence relations. 269
- Radó, T. (Cf. Hsiao, R. G.)  
Semi-continuity. 5  
What is the area of a surface? 155  
On continuous path-surfaces of zero area. 224  
On a problem of Geöcze. 270
- Radó, T. and Reichelderfer, P.  
Convergence in length and convergence in area. 75
- Raduán, F. Botella. See Botella Raduán.
- Radzig, M. A. See Dachanelidse, G. J.
- Raiford, T. E.  
Skewness of combined distributions. 20
- Raikov, D.  
On absolutely continuous set functions. 219  
A new proof of the uniqueness of Haar's measure. 219
- Rajalakshman, D. V.  
Extreme values of samples taken from a rectangular population. 21
- Ramachandran, G. N.  
Reflection of light by a periodically stratified medium. 151
- Ramamurti, B.  
On ten associated points in [4]. 167
- Ramamurti, B. and Sitaraman, B.  
On maximal sets of confounded interactions in a ( $2^n$ ,  $2^k$ ) confounded design. 281
- Ramsey, B. P. See Nielsen, K. L.
- Randall, M. See Longtin, B.
- Randall, M. and Longtin, B.  
Intuitive and descriptive geometry of function space: Graphical representation of geometrical figures. 12  
Intuitive and descriptive geometry of function space: Geometric configurations. 12
- Randels, W. C.  
A new derivation of Munk's formulae. 228
- Rao, B. S. Madhava. See Madhava Rao.
- Rao, C. Radhakrishna. See Radhakrishna Rao.
- Rao, D. V. B.  
Two inversion formulae. 98
- Rao, K. Sambasiva. See Sambasiva Rao.
- Rao, M. V. Subba. See Subba Rao.
- Rathnam, P.  
Theorems of algebraic function fields of one variable. 72
- Ratzersdorfer, J.  
Rectangular plates with stiffeners. 63  
Determination of the buckling load of struts with successive approximations. 229
- Rauh, K.  
Die Kurbelkurve des symmetrischen Doppelkurbelgetriebes mit dem Hub "0." 284
- Reade, M. See Beckenbach, E. F.
- Rédei, L.  
Über den Euklidischen Algorithmus in reellquadratischen Zahlkörpern. 266  
Zu einem Approximationssatz von Koksma. 266
- Reichardt, H.  
On a new theory of free turbulence. 262
- Reichelderfer, P. V. (Cf. Radó, T.)  
On bounded variation and absolute continuity for parametric representations of continuous surfaces. 213
- Reid, W. T.  
A new class of self-adjoint boundary value problems. 100
- Reinitzhuber, F.  
Beitrag zur Berechnung gedrückter, dünnwandiger Profile oberhalb der Beulgrenze. 179
- Reissner, E.  
Expressions for the strains in a bent, thin shell. 230  
Note on some secondary stresses in thin-walled box beams. 230  
On the calculation of three-dimensional corrections for the two dimensional theory of plane stress. 263
- Reissner, H.  
Oscillations of suspension bridges. 233
- Renner, F. See Sommerfeld, A.
- Reutter, F.  
Eine Anwendung des absoluten Parallelismus auf die Schalentheorie. 230
- Reves, G. E. and Szász, O.  
Some theorems on double trigonometric series. 217
- Rey Pastor, J.  
Riemann's formula and the Laplace transformation. 40  
Spherical conoid with two rectilinear directrices. 166
- Ribeiro, H. See Monteiro, A.
- Riblet, H. J.  
Factorization of differential ideals. 72  
Symmetric differential expressions. 198
- Rice, S. O.  
Filtered thermal noise—fluctuation of energy as a function of interval length. 205
- Richardson, A. R.  
The class-ring in multiplicative systems. 185
- Richeson, A. W.  
Laplace's contribution to pure mathematics. 65
- Richmond, H. W.  
A note upon Prof. Mordell's paper. 265
- Rickart, C. E.  
Integration in a convex linear topological space. 162
- Riesenkampf, B. K. and Kalinin, N. K.  
Dreidimensionale Grundwasserbewegung mit einer freien Oberfläche von der Form eines Ellipsoides. 229
- Riordan, J. and Shannon, C. E.  
Number of two-terminal series-parallel networks. 151
- Rios, S.  
Singularities of the Laplace integral. 40
- Ritt, J. F.  
A family of functions and its theory of contact. 268  
Bézout's theorem and algebraic differential equations. 277
- Rivlin, R. S. See Cherry, E. C.
- Roberts, J. H. and Civin, P.  
Sections of continuous collections. 172
- Robinson, G. de B.  
On a paper by R. H. Bruck and T. L. Wade. 128
- Robinson, L.-B.  
Système de Riquier et calcul tensoriel. II. 44
- Robinson, R. M.  
Bounded univalent functions. 77  
Analytic functions in circular rings. 241
- Rocard, Y.  
Dualité des mécanismes d'autooscillation. 233
- Rocard, Y. and Véron, M.  
Sur la consection vise d'un fluide s'écoulant en régime laminaire le long d'une plaque. 176

- Rogosinski, W. W. (Cf. Fuchs, W. H. J.)  
On Hausdorff's methods of summability. II. 195
- Romañá, A.  
Astronomical work of Galileo Galilei. 65
- Rose, M. E.  
The specular reflection of plane wave pulses in media of continuously variable refractive properties. 199
- Rosenblatt, A.  
Coefficients of univalent series. 7  
Théorèmes des grands nombres dans la théorie de la probabilité. 16  
Théorèmes des petits nombres de Poisson, de Bortkiewicz et G. Pólya. Application aux phénomènes rares. I. Propagation des maladies contagieuses: peste bubonique au Brésil. 28  
Theorem of Kutta-Joukowski in aerodynamics. 61  
Obituary: Henri Lebesgue. 65  
Obituary: Émile Picard. 66  
On the theorem of Kutta-Joukowski in aerodynamics. 177
- Rosenthal, A.  
Differentiation of integrals and approximate continuity. 5
- Rosbach, H.  
Über die unter einem Damm durch eine horizontale Parallschicht sickende Wassermenge und die Auftriebsdruckverteilung an der Dammbasis. 229
- Rossier, P.  
Construction de courbes tangentielles sans point. 5
- Roubaud-Valette, J.  
Les équations de Maxwell et l'espace elliptique à trois dimensions. 151
- Roy, M.  
Écoulement à symétrie de rotation d'un fluide compressible. 175
- Roy, S. K.  
On a case of slow viscous flow. 176
- Roy, S. N.  
Analysis of variance for multivariate normal populations: sampling distribution of the requisite  $p$ -statistics on the null and non-null hypotheses. 106  
Sampling distribution of  $p$ -statistics and certain allied statistics on the non-null hypothesis. 106
- Roy, S. N. and Bose, R. C.  
Use and distribution of the Studentized  $D^2$ -statistic when the variances and covariances are based on  $k$  samples. 105
- Royall, N. N., Jr.  
Bounded Laplace transforms. 98
- Rozet, O.  
Sur la construction d'une surface projectivement canonique. 253  
Sur les surfaces de genres un, d'ordre huit, de l'espace à cinq dimensions. 253
- Rúa, J. García. See García Rúa.
- Ruchadze, A. K.  
Biegung nahezu prismatischer Stäbe. 180
- Rufus, W. C.  
David Rittenhouse as a mathematical disciple of Newton. 181
- Running, T. R.  
Graphical solutions of cubic, quartic, and quintic. 202
- Rutherford, D. E.  
On the relations between the numbers of standard tableaux. 133
- Sadosky, M.  
On the boundary behavior of the derivative of a harmonic function. 44
- Sadowsky, M. A.  
Equiareal patterns. 179  
A principle of maximum plastic resistance. 263
- Sagastume Berra, A. E.  
 $p$ -adic numbers and topology. 69
- Saibel, E.  
A modified treatment of the iterative method. 148  
A general method of approximation to the influence function of an elastic system. 178
- Salem, R.  
Sets of multiplicity for trigonometrical series. 38  
Singular monotonic functions of the Cantor type. 38  
On a theorem of Zygmund. 156  
On some singular monotonic functions which are strictly increasing. 217
- Salem, R. and Spencer, D. C.  
On sets of integers which contain no three terms in arithmetical progression. 131  
The influence of gaps on density of integers. 190
- Saltykow, N.  
Problèmes modernes d'intégration des équations aux dérivées partielles du premier ordre à une fonction inconnue. 143
- Salzer, H. E. See Lowan, A. N.
- Sambasiva Rao, K. and Nagabhushanam, K.  
A note on Vinogradov-numbers. 240
- Samelson, H. See Halmos, P. R.; Hopf, H.; Montgomery, D.
- Samuelson, P. A.  
A method of determining explicitly the coefficients of the characteristic equation. 148  
Fitting general Gram-Charlier series. 279
- von Sanden, H.  
Zur Berechnung des kleinsten Eigenwerts von  $y'' + \lambda p(x)y = 0$ . 149
- Sanders, S. T., Jr.  
Linear transformation whose variables and coefficients are sets of points. 74
- Sandomire, M. M. See Day, B. B.
- Sanguinetti, J.  
Some marginal notes. 252
- San Juan, R.  
An algorithm for summation of divergent series. 80
- Santaló, L. A.  
Isaac Newton and the binomial theorem. 65  
Verallgemeinerung eines Satzes von T. Kubota über Eilinen. 112  
Supplement to: Theorem on sets of parallelepipeds with parallel edges. 112  
Some mean values and inequalities relating to curves on the sphere. 169  
An integral formula concerning convex figures. 169  
On certain varieties of the type of a developable in Euclidean space of four dimensions. 170  
Integral formulas in Crofton's style on the sphere and some inequalities referring to spherical curves. 252  
On the concept of curvature of a surface. 257
- Sard, A.  
The measure of the critical values of differentiable maps. 153
- Satterthwaite, F. E.  
Generalized analysis of variance. 24  
Linear restrictions on chi-square. 104  
Generalized Poisson distribution. 163
- Sauer, R.  
Charakteristikenverfahren für die eindimensionale instationäre Gasströmung. 260
- Sauer, R. and Pösch, H.  
Integriermaschine für gewöhnliche Differentialgleichungen. 284
- Savur, S. R.  
Test of significance in approximate periodogram analysis. 108
- Schaaff, W.  
Bemerkungen über eine Arbeit von Heinz Schröder: Über die Verbiegung der Flächen zweiter Ordnung. 257
- Schade, T. See Krienes, K.
- Schaeffer, A. C. See Boas, R. P., Jr.; Forsythe, G. E.



- Schatten, R.  
On the direct product of Banach spaces. 161
- Scheffé, H.  
Inverse problem in correlation theory. 23  
Theory of testing composite hypotheses with one constraint. 107  
On the ratio of the variances of two normal populations. 164  
On solutions of the Behrens-Fisher problem, based on the  $t$ -distribution. 221  
Linear differential equations with two-term recurrence formulas. 275
- Scheffers, H.  
Allgemeine Schwankungstheorie. 29
- Schelkunoff, S. A.  
A mathematical theory of linear arrays. 204  
The impedance of a transverse wire in a rectangular wave guide. 234
- Schelkunoff, S. A. and Feldman, C. B.  
On radiation from antennas. 92
- Scherk, P. See Artin, E.
- Schevtchenko, K. N.  
Application of the theory of plasticity to the rolling of metals. 180  
On the distribution of stresses in a rolled bar. 180
- Schiffer, M.  
Variation du diamètre transfini. 78  
Variation of the Green function and theory of the  $p$ -valued functions. 215  
The span of multiply connected domains. 271
- Schilhansl, M. See Thoma, D.
- Schilling, O. F. G. See Kaplansky, I.; MacLane, S.
- Schlapp, R.  
A note on small vibrations. 173
- Schlichting, H.  
Die Grenzschicht an der ebenen Platte mit Absaugung und Ausblasen. 227
- Schmeidler, W.  
Über ein zweidimensionales Analogon einer Formel der Integralrechnung. 273
- Schmidli, S.  
Gewisse Interpolationsreihen. 39
- Schmidt, H. and Schröder, K.  
Laminare Grenzschichten. Ein kritischer Literaturbericht. I. Grundlagen der Grenzschichttheorie. 120
- Schmidt, W.  
Turbulente Ausbreitung eines Stromes erhitzter Luft. II. 178
- Schminke, H.  
Eine Schieberanordnung für die Schlüsselgleichung  $f_1(\phi(\alpha) + \psi(\beta)) + f_2(\gamma) = f_3(\alpha, \beta, \gamma)$ , wobei nur das Endresultat abzulesen ist. 284
- Schneider, O.  
On a parameter used to characterize bivariate statistical distributions. 280
- Schoenberg, I. J.  
Local convexity in Hilbert space. 247
- Schönberg, M. (Cf. de Moraes, A.)  
Fundamentals of a theory of Green's functions. 84
- Schriever, O.  
Eine anschauliche Darstellung der Theorie der inhomogenen ebenen Welle. 286
- Schröder, K. See Schmidt, H.
- Schrödinger, E.  
Non-linear optics. 31  
Dynamics and scattering-power of Born's electron. 173  
Pentads, tetrads, and triads of meson-matrices. 207  
Systematics of meson-matrices. 207
- Schubert, G.  
Effekte zweiter Ordnung bei Biegung und Torsion dünnwandiger Rohre elliptischen Querschnitts. 64  
Zur Frage der Druckverteilung unter elastisch gelagerten Tragwerken. 264
- Schumann, T. E. W.  
Yule's method of investigating periodicities of disturbed series. Motion of a pendulum in a turbulent fluid. 27
- Schumann, W. O.  
Über Plasmalaufzeitschwingungen. 291
- Schwabe, M.  
Pressure distribution in nonuniform two-dimensional flow. 175
- Schwartz, H. M.  
Sequences of Stieltjes integrals. II. 154
- Schweigert, G. E.  
Fixed elements and periodic types for homeomorphisms on s. l.c. continua. 172
- Schwerdtfeger, H.  
On contact transformations associated with the symplectic group. 184
- Schwez, M.  
Bestimmung der Vertikalkomponenten der Geschwindigkeit einer sich bewegenden Luftmasse mittels der hydrodynamischen Bewegungsgleichungen. 60
- Scott, T.  
A dual quadratic transformation associated with the Hessian conics of a pencil. 110
- Scott, W.  
Lower semi-continuity of double integrals in the parametric form. 155
- Scott, W. M.  
A remark on algebras of matrices. 237
- Scott, W. T. and Uhlenbeck, G. E.  
On the theory of cosmic-ray showers. II. Further contributions to the fluctuation problem. 152
- Searle, G. F. C.  
The force required to give a small acceleration to a slowly-moving sphere carrying a surface charge of electricity. 151
- Sebastião e Silva, J.  
Ensembles fermés et problème de Wiener. 87
- Sedgwick, W. F.  
On the theory of successive radioactive transformations. 99
- Segal, B. I. (Cf. Gantmacher, F. R.)  
Approximate calculation of some hyperelliptic integrals that occur in the design of dams. 148
- Segond, M.  
Intervalle de convergence dans la méthode de Cauchy-Lipschitz. 42
- Segre, B.  
The postulation of a multiple curve. 167  
Non-singular cubic surfaces. 254  
On limits of algebraic varieties, in particular of their intersections and tangential forms. 255
- Seidel, W. and Walsh, J. L.  
Approximation by Euclidean and non-Euclidean translations of an analytic function. 10  
Derivatives of functions analytic in the unit circle and their radii of univalence and of  $p$ -valence. 215
- Seifert, H.  
Zur asymptotischen Integration von Differentialgleichungen. 276
- Sekar, C. Chandra. See Chandra Sekar.
- Selberg, A.  
Satz von A. Gelfond. 6  
Ganzwertige ganze transzendente Funktionen. II. 6
- Sen, B.  
Stresses in an infinite strip due to an isolated couple acting at a point inside it. 123
- Sen, H. K.  
Darboux's property and its applications. 5
- Sen, N. R.  
A note on meson wave. 144
- Serber, R. and Dancoff, S. M.  
Strong coupling mesotron theory of nuclear forces. 207



- Sergescu, P.  
An episode in the struggle for the triumph of differential calculus; the Rolle-Sourin polemic 1702-1705. 65  
Identité des auteurs de quelques articles mathématiques, insérés dans "Le Journal des Savants" 1684-1703. 65  
Life and mathematical work of Henri Lebesgue. 66
- Seth, B. R.  
Viscous solutions obtained by superposition of effects. 176
- Seth, G. R. and Gupta, Q. C.  
Method of images applied to waves in canals. 60
- Sewell, W. E.  
Degree of approximation by polynomials in the complex domain. 78
- Seyfarth, H. H. G.  
Nomographische Verfahren zur Berechnung und Konstruktion von Kreiselkörpern. Der günstigste Kreiselkörper, für den Material, Trägheitsmomentenverhältnis und Durchmesser vorgeschrieben sind. 116
- Shabbar, M.  
One parameter groups of deformations in Riemannian spaces. 259
- Shabde, N. G.  
On an integral involving Laguerre functions. 197
- Shah, S. M.  
Theorem of Pólya. 6  
Integral functions of integral or zero order. 6  
Theorem on integral functions of integral order. II. 6  
Theorem of Valiron and Collingwood. 6  
The lower order of the zeros of an integral function. 137  
The maximum term of an entire series. 137  
On the relations between the lower order and the exponent of convergence of zeros of an integral function. 214  
On integral functions of infinite order. 214
- Shanker, H.  
Expansion of the product of two parabolic cylinder functions of non integral order. 81
- Shannon, C. E. See Riordan, J.
- Shannon, S.  
Comparative aspects of the point binomial polygon and its associated normal curve of error. 279
- Shapiro, H.  
An arithmetic function arising from the  $\phi$  function. 188
- Sharma, J. L.  
Recurrence formulae of the generalized Lamé functions. 82
- Shevchenko, K. N. See Schevtchenko.
- Shock, N. W. and Morales, M. F.  
Fundamental form for the differential equation of colonial and organism growth. 28
- Shohat, J.  
Closure for orthogonal polynomials. 41
- Shohat, J. A. and Bushkovitch, A. V.  
On some applications of the Tchebycheff inequality for definite integrals. 193
- Shor, J. B.  
On the theorem of Roberts-Tchebyshev. 116  
On determination of accelerations in spatial mechanisms. 116  
On the determination of screw axes in spatial mechanisms. 174
- Shrivastava, M. P. (Cf. Nair, K. R.)  
On the  $D^2$ -statistic. 23
- Shukla, P. D.  
Derivates of a function of Denjoy. 5
- Shulezhko, P. G.  
On the stability of thin elastic anisotropic plates of variable rigidity. 123
- Shvetz, M.  
The course of the velocity of wind in twenty-four hours and the turbulent diffusion. 262
- Siebold, E. von Erhardt-. See Erhardt-Siebold.
- Siegel, C. L.  
Stability of analytic mappings. 14
- Siegel, C. L. (Continued)  
Iteration of analytic functions. 76  
Contributions to the theory of the Dirichlet  $L$ -series and the Epstein zeta-functions. 189  
Symplectic geometry. 242  
Note on automorphic functions of several variables. 243
- Siegel, I. H.  
Note on a common statistical inequality. 220
- Siegert, A. J. F.  
A mechanical integrator for the computation of gravity anomalies. 203
- Silberstein, L.  
Effect of gradual light absorption in photographic exposure. 32  
Space relation among five points in elliptic and hyperbolic geometry. 50  
Differentially cyclical sets of functions. Extension of the concept of hyperbolic functions. 81  
Fundamental criterion of uniform representability of equiluminous colors on a geometrical surface. 92  
On some infinite sets of numbers. 194  
Investigations on the intrinsic properties of the color domain. II. 203
- Šilov, G. E.  
On the Fourier coefficient of a class of continuous functions. 156
- Silva, J. Sebastião e. See Sebastião e Silva.
- Silver, R. S., Weir, G. and Weir, J.  
The determination of turning values by means of logarithmic graphs. 284
- Silverstone, H. See Aitken, A. C.
- Simaika, J. B.  
Interpolation for fresh probability levels between the standard table levels of a function. 20
- Simonov, L. A.  
On three-dimensional flow in hydro-turbines. 119  
Construction of shapes by means of a hodograph of velocities. 228
- Singer, J.  
A pair of generators for the simple group  $LF(3,3)$ . 191
- Sinha, S.  
A few infinite integrals. 141  
Some infinite integrals. 141
- Sirvint, G.  
Quelques exemples de séries de Dirichlet dont la suite d'exposants est condensée. 218
- Sirvint, U.  
Convex sets and linear functionals in an abstract space. I, II. 219
- Sispánov, S.  
The sieve of Eratosthenes and the logarithmic integral of Tchebyshev. 211
- Sitaraman, B. See Ramamurti, B.
- Sivukhin, D. V.  
Contribution to the molecular theory of light reflection. 286
- Slepian, J.  
Energy and energy flow in the electromagnetic field. 31
- Smiley, M. F. (Cf. Pitcher, E.)  
S. Kakutani's characterization of  $(L)$ -spaces. 12  
Rational canonical form of a matrix. 68  
A comparison of algebraic, metric, and lattice betweenness. 248
- Smiley, M. F. and Transue, W. R.  
Applications of transitivity of betweenness in lattice theory. 248
- Smith, B. B.  
Note on an alternant suggested by statistical theory. 105
- Smith, O. K. See Levinson, N.
- Smith, P. A.  
Everywhere dense subgroups of Lie groups. 3  
Stationary points of transformation groups. 3

- Smorodinsky, J.  
The "Bremsstrahlung" of the particle with spin one. 235, 236
- Šmulian, V.  
Approximation in the space of bounded functions. 162
- Snapper, E.  
Structure of linear sets. 13
- Snow, C.  
The hypergeometric and Legendre functions with applications to integral equations of potential theory. 197
- Sokolnikoff, I. S.  
New methods of solution of two-dimensional problems in elasticity. 122
- Sokolnikoff, I. S. and Specht, R. D.  
Two-dimensional boundary value problems in potential theory. 144
- Sokolovsky, W. W.  
Ueber ein Problem der elastisch-plastischen Torsion. 180  
On the allowance for strain hardening of material in the problem of elastic-plastic torsion. 231  
Fundamental equations of the limit equilibrium of earthy medium. 231  
On the stability of slopes. 231
- Sokolow, A.  
Streuung der Mesonen unter Berücksichtigung der Dämpfung. 96
- Somenzi, V.  
Interazione elettrodinamica di due elettroni e teoria di Welker della superconduttività. 30
- Sommerfeld, A. and Renner, F.  
Strahlungsenergie und Erdabsorption bei Dipolantennen. 287
- Soonawala, M. F.  
The structure of atomic nuclei. 207
- Soudan, R.  
Déformabilité d'un corps à potentiel constant. 44
- Southwell, R. V.  
Practically important stress-systems in solids of revolution. 62
- Specht, R. D. See Sokolnikoff, I. S.
- Spence, R. D. and Wells, C. P.  
Propagation of electromagnetic waves in parabolic pipes. 93
- Spencer, D. C. (Cf. Bergman, S.; Salem, R.)  
Coefficients of schlicht functions. 76  
A function-theoretic identity. 137  
Note on mean one-valent functions. 138  
The lattice points of tetrahedra. 190
- Spencer, D. E.  
Illumination from arrays of rectangular sources. 92
- Spoerl, C. A.  
Whittaker-Henderson graduation formula A. Mixed difference case. 91  
Solving equations in the machine age. 282
- Sprague, A. H.  
Differential geometry problem using tensor analysis. 115
- Springer, C. E.  
Dual geodesics on a surface. 113
- Srinivasiengar, C. N.  
The resultant of wrenches on two given screws. 111  
On the quartic developable. 253
- Stabler, E. R.  
Boolean algebra as an introduction to postulational methods. 183
- Stange, K.  
Zur Berechnung einer Flugbahnschar nach dem Athen-schen Verfahren. 283
- Stanton, H. E.  
Mathematical theory of protoplasmic protrusions. I. 61
- Stepanoff, W.  
Sur l'équation de Laplace et certains systèmes triples orthogonaux. 245
- Stephan, F. F.  
Iterative method of adjusting sample frequency tables when expected marginal totals are known. 24
- Stevenson, A. C.  
Equilibrium of plates. 63  
The boundary couples in thin plates. 231  
The torsion of a fluted column. 231
- Stewart, B. M.  
A maximum problem. 112
- Stewart, H. J.  
Energy equation for a viscous compressible fluid. 59  
Simplified two-dimensional theory of thin airfoils. 121
- Stiefel, E.  
Beziehung zwischen geschlossenen Lie'schen Gruppen und diskontinuierlichen Bewegungsgruppen euklidischer Räume und ihre Anwendung auf die Aufzählung der einfachen Lie'schen Gruppen. 134
- Stockmann, W.  
Horizontale Unruhe der Meeresströmungen, aufgefasst als Turbulenzerscheinung grossen Stils. 60
- Stöhr, A.  
Bemerkungen zur additiven Zahlentheorie. I. Mittlere Ordnung. 241
- Stoilow, S.  
Mathematical work of Henri Lebesgue. 66
- Stoker, J. J. See Friedrichs, K. O.
- Stokes, E. C.  
Applications of the covariant derivative of Cartan in the calculus of variations. 46
- Stone, A. H. and Tukey, J. W.  
Generalized "sandwich" theorems. 75
- Stone, M. H. See Dunford, N.
- Strandhagen, A. G.  
Application of Maclaurin series to beams under simultaneous transverse and axial loading. 180
- Stratton, J. A., Morse, P. M., Chu, L. J. and Hutner, R. A.  
Elliptic cylinder and spheroidal wave functions, including tables of separation constants and coefficients. 281
- Straubel, R.  
Unbestimmte Integrale mit Produkten von Zylinderfunktionen. II. 274
- Stueckelberg, E. C. G.  
Création de paires de particules en théorie de relativité. 56  
Mécanique du point matériel en théorie de relativité et en théorie des quanta. 56
- Sturm, R. G.  
Study of the collapsing pressure of thin-walled cylinders. 64
- Su. See Buchin-Su.
- Subba Rao, M. V.  
Some elliptic function formulae. 139
- Suetuna, Z.  
Sich selbst assoziierte Charaktere der symmetrischen Gruppe. 2
- Sukhatme, P. V.  
Bernstein's improved method of estimating blood-group gene frequencies. 108
- Sullivan, W. L.  
Analysis of systems with known transmission-frequency characteristics by Fourier integrals. 93
- Sunyer Balaguer, F.  
Results concerning the theorems of Picard, Landau and Schottky and criterion of quasi-normality. 241
- Sutton, R. M.  
An instrument for drawing confocal ellipses and hyperbolas. 166
- Swed, F. S. and Eisenhart, C.  
Tables for testing randomness of grouping in a sequence of alternatives. 223
- Synge, J. L.  
The theory of the Schmidt telescope. 204
- Synge, J. L. and Lin, C. C.  
On a statistical model of isotropic turbulence. 263
- Szász, O. (Cf. Reves, G. E.)  
Logarithmic means of rearranged partial sums of a Fourier series. 37

- Szász, O. (Cf. Reves, G. E.) (Continued)  
 Partial sums of harmonic developments and of power series. 37  
 Convergence and summability of trigonometric series. 37  
 On the partial sums of Fourier series at points of discontinuity. 244  
 On sequences of polynomials and the distribution of their zeros. 273
- Szegő, G. (Cf. Erdős, P.; Hille, E.)  
 On the oscillation of differential transforms. I. 97  
 On the oscillation of differential transforms. IV. Jacobi polynomials. 244
- v. Sz. Nagy, G.  
 Zur Theorie der Flächen vom Maximalindex. 251
- Szymanski, P.  
 Notion des ensembles séparés comme terme primitif de la topologie. 87
- Tambs Lyche, R.  
 Fonction continue sans dérivée. 74
- Taraki, A. See Erdős, P.
- Tausky, O. See Best, E.
- Tausky, O. and Todd, J.  
 Infinite powers of matrices. 185
- Tautz, G.  
 Approximation von absolut additiven Mengenfunktionen durch absolut stetige. 269
- Taylor, A. E.  
 Weak topologies of Banach spaces. 12  
 Derivatives in the calculus. 73
- Tchudakoff, N.  
 On Siegel's theorem. 240
- Tellegen, B. D. H.  
 Geometrical configurations and duality of electrical networks. 32
- Terracini, A.  
 Differential equation  $y''' = G(x, y, y')y'' + H(x, y, y')y'^3$ . 54  
 On some geometrical loci. 166  
 Contributions to the geometric study of the differential equations  
 $y''' = F(x, y, y') + G(x, y, y')y'' + H(x, y, y')y'^3$ . 256
- Thébault, V.  
 Théorème de Pilatte. 51
- Theilheimer, F.  
 The influence of sweep on the spanwise lift distribution of wings. 228
- Thriot, K.-H.  
 Untersuchung über die Grenzschicht einer Flüssigkeit über einer rotierenden Scheibe bei kleiner Winkelgeschwindigkeitsänderung. 175
- Thoma, D. and Schilhanal, M.  
 Spannungen und Formänderungen bei tordierten dünnwandigen Hohlzylindern mit kreisförmigem Ausschnitt. 124
- Thomas, M.  
 Sur la quadrature approximative d'une courbe. 148
- Thomas, T. Y.  
 Qualitative analysis of the flow of fluids in pipes. 118
- Thompson, A. J.  
 Table of the coefficients of Everett's central-difference interpolation formula. 202
- Thompson, S. M.  
 Syllogistic logic in linear notation. 125
- Thomson, L. M. Milne-. See Milne-Thomson.
- Thrall, R. M.  
 On the decomposition of modular tensors. I. 134
- Thrall, R. M. and Nesbitt, C. J.  
 On the modular representations of the symmetric group. 134
- Threlfall, W.  
 Calcul des variations global. 201
- Thron, W. J. See Leighton, W.
- Thurston, H. S.  
 The solution of  $p$ -adic equations. 185
- Tichonov, A. N.  
 The effect of inhomogeneity of earth crust on a field of telluric currents. 234
- Tichonov, A. N. and Turkisher, R. J.  
 The influence of an intermediate layer in vertical electric soundation. 234
- Tietze, H.  
 Anzahl komprimierter Gitterpunktmengen von gegebener Punktezahl. 36
- Timoshenko, S. P.  
 Theory of suspension bridges. I, II. 233
- Titchmarsh, E. C.  
 An eigenfunction problem occurring in quantum mechanics. 100  
 On the order of  $\zeta(\frac{1}{2} + it)$ . 131  
 Some problems in the analytic theory of numbers. 131  
 Some properties of the Riemann zeta-function. 265
- Tiwari, S. Y. See Banerjee, S. S.
- Todd, J. See Tausky, O.
- Tola Pasquel, J.  
 On an elementary way of presenting the theory of convexity, of points of inflection and of maxima and minima of real variables. 193
- Tollmien, W.  
 Ein Wirbelsatz für stationäre isoenergetische Gasströmungen. 119
- Tolstoff, G.  
 Sur les fonctions bornées vérifiant les conditions de Cauchy-Riemann. 136
- Tonnelat, M.-A.  
 Théorie de la particule de spin maximum 2. Les tenseurs symétriques du second rang. 152
- Tovbin, A. V.  
 On the structure of groups containing alternative of symmetric subgroups. 133  
 A generalization of Bertrand's theorem on the theory of substitution groups. 133
- Transue, W. R. (Cf. Smiley, M. F.)  
 Representation of subharmonic functions in the neighborhood of a point. 246
- Tranter, C. J.  
 Application of the Laplace transformation to a problem on elastic vibrations. 45
- Treloar, A. E.  
 Random sampling distributions. 220  
 Correlation analysis. 220
- Truell, R.  
 Concerning the roots of  $J_n'(x)N_n'(kx) - J_n'(kx)N_n'(x) = 0$ . 274
- Tsao, F.  
 Tests of statistical hypotheses in the case of unequal or disproportionate numbers of observations in the subclasses. 26
- Tschebotarow, N.  
 On the methods of Sturm and Fourier for transcendent functions. 67  
 On some modification of Hurwitz's problem. 155  
 On a particular type of transcendent equations. 195  
 On  $R$ -integrable polynomials. 195  
 On entire functions with real interlacing roots. 214
- Tseng, Y. Y.  
 Generalized biorthogonal expansions in metric and unitary spaces. 13
- Tsien, H. S. (Cf. von Kármán, T.)  
 Buckling of a column with non-linear lateral supports. 63
- Tukey, J. W. (Cf. Stone, A. H.)  
 Separation of convex sets. 13
- Tunell, G. See Patterson, A. L.
- Turing, A. M.  
 The use of dots as brackets in Church's system. 183



- Turkiah, R. J. See Tichonov, A. N.
- Turnbull, H. W.  
On certain modular determinants. 68  
The projective invariants of four medials. 110  
Collapsible circular sections of quadric surfaces. 110
- Turrière, E.  
Courbes gauches. 113
- Tüzemen, E.  
Généralisation d'un théorème de W. Gleissberg. 259
- Uhlenbeck, G. E. See Nordsieck, A.; Scott, W. T.
- Uhler, H. S.  
Original tables to 137 decimal places of natural logarithms for factors of the form  $1 \pm \pi \cdot 10^{-2}$ , enhanced by auxiliary tables of logarithms of small integers. 89
- Ulrich, F. E. See Mandelbrojt, S.
- Unna, P. J. H.  
Theory of sea waves. 260
- Valeiras, A.  
On monogenic functions of a special class of hypercomplex variables. 140
- Valentine, F. A.  
On the extension of a vector function so as to preserve a Lipschitz condition. 269
- Valette, J. Roubaud-. See Roubaud-Valette.
- Vali, M. A.  
On the sampling distribution of harmonic means. 164
- Van der Lijn, G.  
Polynomes abstraits. II. 13
- Vandiver, H. S.  
Arithmetical theory of the Bernoulli numbers. 34  
General congruences involving the Bernoulli numbers. 34
- Van Mieghem, J.  
Vitesse de propagation des cyclones. 60
- de Varennes e Mendonça, P.  
Orthogonality and analysis of variance. 164
- Varma, R. S.  
Self-reciprocal function. 40  
Infinite integrals involving Whittaker functions. 82
- Vecoua, I.  
On a class of singular integral equations and some boundary value problems of potential theory. 84  
Integral equations with a singular kernel of Cauchy type. 160
- Vecoua, N.  
Integralgleichungen vom Fredholmschen Typus mit Integralen im Hadamardschen Sinne. 83
- Vecoua, N. P. and Kwesselawa, D. A.  
On a boundary value problem of the theory of functions of a complex variable and its application to the solution of a system of singular integral equations. 161
- Vedia, A. Durañona y. See Durañona y Vedia.
- Venkatarayudu, T.  
Normal co-ordinates of symmetric point groups. II. 267  
The character table of a subgroup of the symmetric group of degree 8. 267
- Vera, F.  
Chronological tables for Spain in the 16th century. 181
- Verčenko, I.  
Über das Flächenmass von Mengen. 154
- Vernotte, P.  
Formule pour la quadrature empirique d'une fonction expérimentale. 148
- Véron, M. See Rocard, Y.
- Vessiot, E.  
Variation des fonctions. 74
- Vest, M. L.  
Non-involutorial space transformation associated with a  $Q_{1,n}$  congruence. 114  
Non-involutorial space transformations associated with a linear congruence. 170
- Vetchinkin, V.  
Review of papers by N. Joukovsky and S. Chaplygin which lay the basis of the wing theory. 121
- Vicente Gonçalves, J.  
Sur les systèmes de fonctions à Jacobien nul. 73  
Résultats concernant les régions simples. 87  
Sur quelques théorèmes classiques. 153  
Sur une formule de récurrence. 157  
Contours de Jordan et intégrale de Cauchy. 241
- Victoris, L.  
Zur Theorie der Integrphen. 284
- Vijayaraghavan, T.  
On functions represented by certain series. 155  
Theorem of J. L. Walsh concerning the moduli of zeros of polynomials. 196
- Vinogradov, I. M.  
On the estimation of trigonometrical sums. 211  
An improvement of the estimation of trigonometrical sums. 211
- Vladimirskij, V.  
On the calculation of mean values of the product of two magnitudes corresponding to different moments in statistical mechanics. 208
- von Erhardt-Siebold, E. See Erhardt-Siebold.
- von Kármán, T. See Kármán.
- von Koppenfels, W. See Koppenfels.
- von Laue, M. See Laue.
- von Mises, R. See Mises.
- von Neumann, J. See Neumann.
- von Sanden, H. See Sanden.
- von Sz. Nagy, G. See Sz. Nagy.
- Voznesensky, I. N.  
Principles and schemes of automatic regulation. 116
- Wachs, S.  
Propriétés des transformations pseudo-conformes avec un point frontière invariant. 10
- Wade, T. L. (Cf. Bruck, R. H.)  
Euclidean concomitants of the ternary cubic. 51
- Wagner, R. W.  
Differentials and analytic continuation in non-commutative algebras. 239
- Wagner, V.  
On the Cartan group of holonomicity for surfaces. 257
- Waidelich, D. L.  
Steady state currents of electrical networks. 94
- Wald, A. (Cf. Mann, H. B.)  
Principles of statistical inference. 25  
Asymptotically shortest confidence intervals. 25  
Examples of asymptotically most powerful tests. 165  
Setting of tolerance limits when the sample is large. 220  
On a statistical generalization of metric spaces. 222  
An extension of Wilks' method for setting tolerance limits.
- Walfisz, A.  
Zur additiven Zahlentheorie. IX. 132  
On lattice points in high-dimensional ellipsoids. IX. 132
- Walker, A. G.  
Note on a distance invariant and the calculation of Ruse's invariant. 171
- Walker, G. L. See Flexner, W. W.
- Wall, H. S. (Cf. Greenberg, H. J.; Hellinger, E. D.)  
Behavior of certain Stieltjes continued fractions near the singular line. 8
- Wallace, A. D.  
Separation spaces. II. 87  
Monotone transformations. 147
- Wallis, W. A. (Cf. Moore, G. H.)  
Compounding probabilities from independent significance tests. 222
- Walsh, C. E.  
Analogue of Mercer's theorem. 79  
Inequalities for positive series. 194



- Walsh, J. L. See Seidel, W.
- Walther, A. and Brinkmann, K.  
Zum Sprungstellen-Verfahren, insbesondere für die Entwicklung nach Kugelfunktionen. 283
- Wang, F. T.  
Absolute Cesàro summability of trigonometrical series. 37  
Riesz summability of Fourier series. I, II. 37  
Note on the absolute summability of trigonometrical series. 217  
A note on Cesàro summability of Fourier series. 272  
Some results on Riesz's summability of Fourier series. 272
- Ward, J. A.  
Note on the quartic and its Hessian. 110
- Warschawski, S. E.  
Conformal mapping of infinite strips. 9
- Waschakidze, D.  
Über die numerische Lösung der biharmonischen Gleichung. 149
- Wassilkoff, D.  
Partially ordered linear systems, Banach spaces and systems of functions. 162
- Watson, G. N.  
An infinite integral. 142
- Wavre, R.  
Intégrale de Cauchy étendue à une ligne ouverte. 6  
Problème d'attraction et les fonctions orthogonales aux fonctions harmoniques. 44  
Obituary: Vito Volterra. 1860-1940. 66
- Weber, C.  
Halbebene mit periodisch gewelltem Rand. 230
- Weber, E.  
Traveling waves on transmission lines. 93  
Ultrashort electromagnetic waves. I. Electromagnetic theory. 204
- Webster, M. S.  
A convergence theorem for certain Lagrange interpolation polynomials. 196
- Wei, D.  
Necessary and sufficient conditions that regression systems of sums with elements in common be linear. 164
- Weil, A. See Allendoerfer, C. B.
- Weinberg, A. M.  
Green's functions in biological potential problems. 44
- Weinstein, A. (Cf. Aronszajn, N.)  
Spherical pendulum and complex integration. 116
- Weir, G. See Silver, R. S.
- Weir, J. See Silver, R. S.
- Weisner, L.  
Roots of certain classes of polynomials. 40
- Weiss, E. A.  
Koppelkurve als Laguerresches Bild einer Hesseschen Korrespondenz. 51
- Wells, C. P. See Spence, R. D.
- Wendt, G.  
Zur Dioptrik elektronenoptischer Geräte mit beliebig gekrümmten Abbildungsachsen. 286
- Wendt, H. See Hantzsch, W.
- West, S. S.  
The mutual impedance of collinear grounded wires. 289
- Weyl, H. See James, R. D.
- Weyl, H. and Weyl, J.  
Theory of analytic curves. 77
- Weyl, J. (Cf. Weyl, H.)  
Exponential curves. 216
- Whaples, G. (Cf. Artin, E.)  
Non-analytic class field theory and Grönwald's theorem. 72
- Wheeler, L. L. See Brown, S. L.
- Wheeler, T. S.  
Energy of the  $1s2s^3S$  state of the helium atom and related two-electron ions. 96
- Whitehead, G. W.  
On the homotopy groups of spheres and rotation groups. 88
- Whiteman, R. A.  
Theory of network synthesis. 94
- Whitman, E. A.  
Some historical notes on the cycloid. 181
- Whitman, P. M.  
Splittings of a lattice. 129
- Whitney, H.  
Differentiability of the remainder term in Taylor's formula. 192  
Differentiable even functions. 193  
The general type of singularity of a set of  $2n - 1$  smooth functions of  $n$  variables. 193
- Whitrow, G. J.  
Axiomatic treatment of kinematical relativity: a reply to Dr. G. C. McVittie. 286
- Whittaker, E. T.  
Aristotle, Newton, Einstein. 65
- Whyburn, G. T.  
Analytic topology. 86  
What is a curve? 89  
On the interiority of real functions. 224
- Whyburn, W. M.  
Differential equations with general boundary conditions. 100
- Widder, D. V. See Loomis, L. H.
- Wiechowski, W.  
Zur Stromverdrängung beim koaxialen Kabel. 289
- Wiegardt, K.  
Zur Theorie der Wirbelbewegung. 175
- Wiener, N. See Pólya, G.
- Wiener, N. and Wintner, A.  
Ergodic dynamics of almost periodic systems. 15  
The discrete chaos. 220
- Wilcox, L. R.  
Complementation in lattices. 69
- Wilder, R. L. See Eilenberg, S.
- Wilkes, J. See Kasner, E.
- Wilks, S. S.  
Statistical prediction with special reference to the problem of tolerance limits. 165
- Williams, M. H.  
Ruled surfaces in Euclidean four space. 170
- Williamson, J.  
A generalization of the polar representation of non-singular matrices. 68
- Wilson, A. H.  
Quantum theory of radiation damping. 95
- Wilson, E. B.  
Controlled experiment and the four-fold table. 26  
Contingency tables. 26  
Confidence intervals. 26
- Wilson, E. B. and Burke, M. H.  
The epidemic curve. I, II. 201
- Wilson, E. B. and Worcester, J.  
 $t$ -test. 23  
Contingency tables. 105  
Association of three attributes. 106
- Wilson, J. T.  
Surface waves in a heterogeneous medium. 101
- Wilson, R. (Cf. Macintyre, A. J.)  
On the evaluation of  $\int dx/((x - e)^{n+1} \sqrt{ax^2 + 2bx + c})$  74
- Wintner, A. (Cf. Hartman, P.; Wiener, N.)  
Elementary analogue of the Riemann-Mangoldt formula. 35  
Riemann's hypothesis and harmonic analysis. 217  
 $Q$ -matrices of Toeplitz. 244
- Wittich, H.  
Ganze Lösungen der Differentialgleichung  $w'' = f(w)$ . 42
- Wolf, F.  
On majorants of subharmonic and analytic functions. 144  
On harmonic and analytic functions. 278

- Wolf, K.  
Kreiszylindrische Behälter auf nachgiebiger Unterlage. 180, 264
- Wolfenden, H. H.  
Fundamental principles of mathematical statistics. 18  
On the formulae for calculating the "exposed to risk" in constructing mortality and other tables from the individual records of insured lives. 109
- Wolfowitz, J.  
Additive partition functions and a class of statistical hypotheses. 107
- Wong, Y.-C.  
Some Einstein spaces with conformally separable fundamental tensors. 258  
Family of totally umbilical hypersurfaces in an Einstein space. 258  
A note on complementary subspaces in a Riemannian space. 258
- Worcester, J. See Wilson, E. B.
- Wright, S.  
Statistical genetics and evolution. 27
- Würschmidt, J.  
Shock of variable masses and the law of reflexion of a particle. 286
- Wylie, C. R., Jr.  
New forms of certain integrals. 73
- Yates, R. C.  
Folding the conics. 166
- Yosida, K.  
Vector lattices and additive set functions. 247
- Young, L. C.  
Convergence of Fourier-Bessel series. 39  
Generalized surfaces in the calculus of variations. II. 49
- Youngs, J. W. T.  
A note on separation axioms and their application in the theory of a locally connected topological space. 249
- Yu, F. C. See Ma, S. T.
- Yule, G. U. See Chambers, E. G.
- Zadunaisky, P. E.  
Study on the Foucault pendulum. 116
- Zamorev, A. A.  
Untersuchung der zwei-dimensionalen inversen Aufgabe der Potentialtheorie. 102  
Determination of the form of a body by the derivatives of the external gravitational potential. 102
- Zariiski, O.  
Simplified proof for the resolution of singularities of an algebraic surface. 52
- Zchakaja, D.  
Über die mathematischen Kenntnisse in Georgien im XVIII. Jahrhundert. 65
- Zech, T.  
Zum Abklingen nichtlinearer Schwingungen. 275
- Zippin, L. See Montgomery, D.
- Zuckerman, H. S.  
On some formulas involving the divisor function. 210
- Zumkley, J.  
Ein numerisch gerechneter Spezialfall des allgemeinen Dreikörperproblems in vereinfachter Behandlung. 259
- Zurmühl, R. See Collatz, L.
- Zygmund, A.  
On the convergence and summability of power series on the circle of convergence. II. 76  
Two notes on inequalities. 135

# SUBJECT INDEX

The sign \* is used to mark only those books which contain a general exposition of the field in question.

Should a cross-reference refer to a field or subfield which does not occur in this subject index, this means that no paper reviewed in this volume has been classified as belonging to this field or subfield.

ABELIAN GROUPS. See: groups.

ABELIAN INTEGRALS. See: algebraic functions; algebraic geometry; elliptic functions.

ABSOLUTE DIFFERENTIAL CALCULUS. See: differential geometry (Riemannian geometry); vector calculus (tensors).

ABSOLUTELY MONOTONE FUNCTIONS. See: completely monotone functions.

ABSTRACT SPACES. See: differential geometry (Finsler spaces); ergodic theory; functional analysis; functions of real variables (functions in abstract spaces); geometry (abstract metrics); measure and integration; sets; topology (topological spaces).

ACOUSTICS. Cf. Mechanics of continua; numerical methods (practical harmonic analysis).

Kohler, M.	29	Bolt, R. H.-Feshbach,	Friedlander, F. G.	160
		H.-Clogston, A. M.	Maa, D.-Y.	289
		Ginsburg, V. L.		121

ACTUARIAL MATHEMATICS. Cf. Probability; statistics.

Analysis of mortality. Cf. Statistics (biometrics).

Anderson, R. D.	28	Wolfenden, H. H.	109	Greville, T. N. R.	281
-----------------	----	------------------	-----	--------------------	-----

Insurance.

Rosenblatt, A.	28	Chambers, E. G.-	Jeming, J.	281
		Yule, G. U.	Lang, K.	281

ADDITIVE NUMBER THEORY. See: number theory (additive).

AERODYNAMICS. See: mechanics of continua.

AFFINE DIFFERENTIAL GEOMETRY. See: differential geometry (conformal).

AGGREGATES. See: lattices; sets.

ALGEBRA: ABSTRACT. Cf. Algebra: linear; groups.

Lattices and Boolean algebras. Cf. Lattices; logic (formal).

Maharam, D.	11, 12	Duthie, W. D.	74	Richardson, A. R.	185
Klein-Barmen, F.	69	Ore, O.	128	Braithwaite, R. B.	238
Wilcox, L. R.	69	Whitman, P. M.	129	Smiley, M. F.-	
Newman, M. H. A.	70	Krishnan, V. S.	129	Transue, W. R.	248
Dunford, N.-Stone,		Martin, R. M.	182	Smiley, M. F.	248
M. H.	71	Stabler, E. R.	183		

Rings and ideal theory. Cf. Functional analysis (operators).

Snapper, E.	13	Newman, M. H. A.	70	Mahler, K.	185
Jennings, S. A.	69	Artin, E.-Whaples, G.	129	Albert, A. A.	186
Everett, C. J., Jr.	69	Grundy, P. M.	129	Kurosh, A.	238
Baer, R.	70	Forsythe, A.	129	Levitaki, J.	238
MacDuffee, C. C.	70	Levi, H.	185	Baer, R.	267
Brauer, R.	70	Helmer, O.	185		

Fields and algebras. Cf. Geometry (geometry in fields); number theory.

Chevalley, C.	2	Hochschild, G.	71	Albert, A. A.	186
Levi, F. W.	49	Whaples, G.	72	Jacobson, N.	187
Newman, M. H. A.	70	Artin, E.-Whaples, G.	129	Morosov, V. V.	187
Dunford, N.-Stone,		Bell, E. T.	129	MacLane, S.-	
M. H.	71	Kaloujnine, L.	130	Schilling, O. F. G.	187
Mercier, A.	71	Albert, A. A.	130	Scott, W. M.	237
Bruck, R. H.	71	Malcev, A.	130	Arf, C.	237
Perlis, S.	71	Hooke, R.	134	Bruck, R. H.	238
Ancochea, G.	71	Malcev, A.	135	Wagner, R. W.	239
Chevalley, C.	71	Tausky, O.-Todd, J.	185	Hasse, H.	239
Kaplansky, L.-		Mahler, K.	185	Malcev, A.	267
Schilling, O. F. G.	71				

Galois theory. Cf. Algebra: equations (classical Galois theory).

*Artin, E.	66	Lee, H. L.	238
Kaloujnine, L.	130	Hasse, H.	239

ALGEBRA: ABSTRACT. (Continued)

$p$ -adic theory. Cf. Number theory (algebraic).

Sagastume Berra,		Hooke, R.	134
A. E.	69	Thurston, H. S.	185

Function fields. Cf. Algebraic functions; algebraic geometry; number theory (analytic theory).

Muhly, H. T.	52	Kolchin, E. R.	72	Rathnam, P.	72
Zariski, O.	52	Riblet, H. J.	72	Hasse, H.	239

ALGEBRA: EQUATIONS. Cf. Polynomials.

\*Levi, F. W. 66

Symmetric functions. Cf. Combinatorial analysis.

Balachandran, K.	67	Ozorio de Almeida, M.	72	Altken, A. C.	237
------------------	----	-----------------------	----	---------------	-----

Zeros, irreducibility. Cf. Algebra: linear (characteristic values); functions of complex variables (zeros); numerical methods (equations); polynomials (zeros; irreducibility).

Weissner, L.	40	Kraft, M.	90	Gaspar, F. L.	196
Lahaye, E.	41	Albert, A. A.	193	Molsen, K.	266
Lipka, S.	41	Tachebotarow, N.	193	Maximoff, I.	273
Lubelski, S.	67	Marden, M.	196	Kneser, H.	273
Tachebotarow, N.	67				

Classical Galois theory. Cf. Algebra: abstract (Galois theory).

\*Artin, E. 66 Polvert, J. 66

Special equations.

Polvert, J.	66	Bhalotra, Y.	67	Hall, N. A.	282
-------------	----	--------------	----	-------------	-----

ALGEBRA: LINEAR (CLASSICAL THEORY). Cf. Algebra: abstract; geometry (projective); groups; numerical methods (systems).

\*Levi, F. W. 66

Matrices, determinants; general theory. Cf. Series (convergence).

Halmos, P. R.	11	Hooke, R.	134	Altken, A. C.	237
Balachandran, K.	67	Eckmann, B.	173	MacDuffee, C. C.	237
Turnbull, H. W.	68	Schwerdtfeger, H.	184	Scott, W. M.	237
Dresden, A.	68	Tausky, O.-Todd, J.	185	Levitaki, J.	238
Foulkes, H. O.	68	Richardson, A. R.	185	Heilinger, E. D.-	
Williamson, J.	68	Frucht, R.	191	Wall, H. S.	244
Smiley, M. F.	68	Schrödinger, E.	207	Pisier, M.	289

Special matrices, determinants.

Kenava Menon, P.	128	Bruck, R. H.-		Robinson, G. de B.	128
		Wade, T. L.	128		

Hypercomplex systems.

Petiau, G.	67	Brand, L.	67	Richardson, A. R.	185
Niven, I.	67	Mercier, A.	71	Benneton, G.	230

Quadratic and bilinear forms. Cf. Functional analysis (equations); number theory.

Oldenburger, R.	184	Dines, L. L.	237	Siegl, C. L.	242
Hodge, W. V. D.	184	Arf, C.	237		

Forms of higher degree. Cf. Number theory.

Gunter, N. 158

Characteristic values, elementary divisors.

Dresden, A.	68	Helmer, O.	185	Born, M.-	
Samuelson, P. A.	148			Ledermann, W.	206

ALGEBRAIC FUNCTIONS. Cf. Algebra: abstract (function fields); algebraic geometry; elliptic functions; functions of complex variables (Riemann surfaces).

Blanc, C.	78	Hasse, H.	239	Siegl, C. L.	242
-----------	----	-----------	-----	--------------	-----

ALGEBRAIC GEOMETRY. Cf. Algebraic functions; geometry (configurations; projective).

Special curves and surfaces. Cf. Calculus (applications); geometry (elementary).

Weiss, E. A.	51	Turnbull, H. W.	110	Godeaux, L.	253
Ward, J. A.	110	Edge, W. L.	110	Sagra, B.	254
Scott, T.	110	Johnson, R. P.	167		

**ALGEBRAIC GEOMETRY.** (Continued)**Curves: general theory.**

Wade, T. L.	51	Gauthier, L.	167	Haase, H.	239
Bronowski, J.	52	Apéry, R.	167	Bompiani, E.	253
Chang, S.-C.	167	Ramamurti, B.	167	Cooldge, J. L.	253
Edge, W. L.	167	Segre, B.	167	Moody, E. I.	253

**Surfaces, varieties: general theory.**

Chevalley, C.	2	Bronowski, J.	168	Gauthier, L.	253
Muhly, H. T.	52	Aprile, G.	168	Srinivasiengar, C. N.	253
Zariski, O.	52	Goddard, L. S.	168	Edge, W. L.	254
Abellanas, P. F.	52	Buchin-Su.	171	Segre, B.	255
Hodge, W. V. D.	52	Hodge, W. V. D.	184	Ritt, J. F.	277
Martinelli, E.	168	Roset, O.	253		

ALGEBRAIC INVARIANTS. See: invariants (algebraic).

ALGEBRAIC NUMBERS. See: number theory.

ALGEBRA OF LOGIC. See: algebra: abstract (lattices); lattices; logic (formal).

ALMOST PERIODIC FUNCTIONS. Cf. Dirichlet series; Fourier series.

Wiener, N.		Wintner, A.	217
Wintner, A.	15		

ANALYTIC FUNCTIONS. See: functions of complex variables.

ANALYTIC GEOMETRY. See: geometry (projective).

ANALYTIC THEORY OF NUMBERS. See: number theory.

**APPROXIMATION AND EXPANSION OF FUNCTIONS.** Cf. Differential equations (boundary value problems); Fourier integrals; Fourier series; functions of complex variables (polynomial expansions; complex interpolation); interpolation; numerical methods; polynomials (polynomial approximations); series; special functions (functions defined by special expansions).

**General theory.**

Duffin, R. J.		Šmulian, V.	162
Echua, J. J.	97	Albert, G. E.	218

**Orthogonal functions and expansions.** Cf. Polynomials (special polynomials).

Toeng, Y. Y.	13	Konambi, D. D.	39	Oberg, E. N.	218
Peebles, G. H.	39	Schmidl, S.	39		

**Completeness theorems.**

Duffin, R. J.		Clarkson, J. A.		Bary, N.	272
Echua, J. J.	97	Erdős, P.	196		

AREA. See: measure and integration (area).

ARITHMETICAL FUNCTIONS. See: number theory (number-theoretical functions).

**ASTRONOMY.**

\*Chandrasekhar, S. 37

**Celestial dynamics.** Cf. Mechanics.

Chandrasekhar, S.		Coutres, R.	58
Krogdahl, W.	58		

**3 and n-body problem.**

Racine, C.	56	Birkhoff, G. D.	116	Buchanan, H. E.	227
García, G.	57	Martin, M. H.	117	Hirichen, J. J. L.	227
Federsen, P.	57	García, G.	174	Zumkley, J.	259

**Orbits.**

Godart, O.	57	Dubiago, A. D.	174	Rabe, E.	259
Lifshitz, J.	94	Lifshitz, J.	227	Okayay	
				Kabakcioglu, T.	259

**Figures of equilibrium.**

Krogdahl, W.	58	Giraud, G.	117
--------------	----	------------	-----

**Astrophysics.**

Coutres, R.	58	Dubiago, A. D.	174	Tüzemen, E.	259
Kopal, Z.	73	Chandrasekhar, S.		Hnatek, A.	260
Banerji, A. C.	117	von Neumann, J.	227	Chandrasekhar, S.	260
Fesenkoff, V.	117	Chandrasekhar, S.	248		

ASTROPHYSICS. See: astronomy (astrophysics).

ASYMPTOTIC EXPANSIONS. See: approximation; series.

ATOMS. See: quantum mechanics.

AUTOMORPHIC FUNCTIONS. See: elliptic functions (automorphic functions).

AXIOMATICS. See: geometry (foundations); logic; probability (foundations); sets (axiomatics).

**BALLISTICS.**

Pugachev, V. S.	149	García, G.	225	Stange, K.	283
-----------------	-----	------------	-----	------------	-----

BANACH SPACES. See: functional analysis; topology (topological spaces).

BERNOULLI NUMBERS. See: differences; series (special sequences).

BERNOULLI POLYNOMIALS. See: differences; polynomials (special).

BESSEL FUNCTIONS. See: special functions (Bessel functions).

BEST APPROXIMATION. See: approximation (best approximation).

BIHARMONIC FUNCTIONS. See: harmonic functions (biharmonic functions).

BILINEAR FORMS. See: algebra: linear (quadratic forms); functional analysis (equations).

BIOGRAPHY. See: history (biography).

BIOLOGICAL PROBLEMS. Cf. Statistics (biometrics).

Wright, S.	27	Sukhatme, P. V.	108	Koyenuma, N.	201
Shock, N. W.		Haldane, J. B. S.	166	Householder, A. S.	202
Morales, M. F.	28	Wilson, E. B.		Pitta, W.	202
Weinberg, A. M.	44	Burke, M. H.	201	Landahl, H. D.	202
Stanton, H. E.	61	Pitta, W.	201		

BIOMETRICS. See: statistics (biometrics).

BIRATIONAL TRANSFORMATIONS. See: algebraic geometry (Cremona transformations).

BOOLEAN ALGEBRAS. See: algebra: abstract (lattices); lattices; logic (formal).

**BOUNDARY VALUE PROBLEMS.** See: differential equations (boundary value problems); functional analysis (existence theorems); harmonic functions (Dirichlet problem); heat conduction; integral equations; numerical methods (differential equations); operational calculus.

BROWNIAN MOTION. See: diffusion; probability (Markoff chains).

CALCULUS. Cf. Differentiation of fractional order; inequalities; logic (foundations); vector calculus.

Rosier, P.	5	Brown, A. B.	135	Dresden, A.	193
Taylor, A. E.	73	Vicente Gonçalves, J.	153	Tola Pasquel, J.	193
Lévy, P.	73	Whitney, H.	192, 193	Herrera, F. E.	
Vicente Gonçalves, J.	73	*James, G.		Balanat, M.	193
Calugarescu, G.	73	James, R. C.	193	Ritt, J. F.	268
Dwight, H. B.	73	Babini, J.	193	Kowalewski, G.	273

**Evaluation of integrals.**

Wylie, C. R., Jr.	73	Bateman, H.	83	Watson, G. N.	142
Kopal, Z.	73	Sedgwick, W. F.	99	Bedell, E.	
Wilson, R.	74	Sinha, S.	141	Gonadles, M. O.	270
Pollard, W. G.	74	Mohan, B.	141	Schmeidler, W.	273

**Contour integrals, Green formulas.**

Carson, A. B.	48	Tolstoff, G.	136	Jung, F.	268
Beckenbach, E. F.	135	Gutiérrez Novoa, L.	193		

**Applications to geometry.**

Brauer, K.		Chang, S.-C.	167	Kamer, E.	198
Müller, H. R.	53	Gutiérrez Novoa, L.	193	Kalustyan, H.	241
Levi, B.	54				

**CALCULUS OF VARIATIONS.****General theory.**

Brady, C. P.	46	McShane, E. J.	48	Myers, F. G.	200
Stokes, E. C.	46	Reid, W. T.	100	Mammanna, G.	200
Landers, M. K.	47	Bobonis, A.	200	Goldstone, H. H.	201
Hasard, K. E.	47	Mansfield, R.	200		



**CALCULUS OF VARIATIONS.** (Continued)

**Multidimensional.**

Morrey, C. B., Jr.	5	Levin, J. H.	47	Young, L. C.	49
Rado, T.	5	Carson, A. B.	48	Davies, E. T.	115
Nordhaus, E. A.	46	McShane, E. J.	48	Lepage, T.	143
Lander, A. W., Jr.	46	Piquet, P. V.	49	Scott, W.	155
Lander, M. K.	47	Mickle, E. J.	49		

**Isoperimetric problems.** Cf. Isoperimetric problems.

Hasard, K. E. 47

**Topological problems.**

Hasard, K. E. 47 Threlfall, W. 201

**Direct methods.** Cf. Numerical methods (differential equations).

Courant, R. 200 Collatz, L. 283

**Minimal surfaces.** Cf. Differential geometry (minimal surfaces).

Nordhaus, E. A. 46 McShane, E. J. 48 Manel, B. 217  
Levin, J. H. 47 Lonseth, A. T. 49

**Special problems.**

Blankinship, W. A. 199

**Generalized geometrical theory.** Cf. Differential geometry (Finsler spaces); geometry (abstract metrics).

Young, L. C. 49 Bueemann, H. 100 Goldstine, H. H. 201

**CAPACITY.** See: polynomials (polynomial approximations); potential theory (capacity constants).

**CARTOGRAPHY.** See: differential geometry (special mapping problems).

**CAUCHY INTEGRAL AND THEOREM.** See: functions of complex variables.

**CELESTIAL MECHANICS.** See: astronomy.

**CHARACTERISTIC VALUES.** See: algebra: linear (characteristic values); differential equations (boundary value problems); functional analysis (existence theorems); integral equations; numerical methods (differential equations).

**CHARACTERS.** See: groups; number theory.

**CIRCLES AND SPHERES, GEOMETRY OF.** See: differential geometry (Laguerre geometry); geometry (geometry of lines).

**CIRCUITS.** See: electricity (networks).

**CLASS FIELDS, CLASS NUMBERS.** See: number theory (class fields).

**COMBINATORIAL ANALYSIS.** Cf. Number theory (elementary).

Fisher, R. A.	27	Kerawala, S. M.	69	Bose, R. C.	
Bose, R. C.		Battin, I. L.	102	Kishen, K.	222
Nair, K. R.	33	Gontcharoff, W.	102	Nair, K. R.	223
Bose, R. C.	33	Narasimha Murli, V.	127	Bose, R. C.	237
Levi, F. W.	49, 66	Fisher, R. A.	127	Gupta, H.	241
Turnbull, H. W.	68	Bose, R. C.	128	Chung, K. L.	248
Etherington, I. M. H.	68	Fisher, R. A.	183, 184	Ramanurti, B.	
Erdelyi, A.		Mann, H. B.	184	Sitaraman, B.	281
Etherington, I. M. H.	68	Montel, P.	184	Bhattacharyya, A.	281

**COMPARISON AND OSCILLATION THEOREMS.** See: differential equations (ordinary linear).

**COMPLETELY MONOTONE FUNCTIONS AND GENERALIZATIONS.** Cf. Convex functions; Fourier integrals (Laplace integrals); moments.

Mandelbrojt, S. 72 Polya, G. 192  
Ulrich, F. E. 72 Bochner, S. 247

**COMPLEX FUNCTIONS.** See: functions of complex variables.

**COMPLEX MULTIPLICATION.** See: elliptic functions (complex multiplication).

**COMPLEX SPACE.** See: geometry (geometry in the complex domain).

**CONFIGURATIONS.** See: geometry (configurations).

**CONFORMAL DIFFERENTIAL GEOMETRY.** See: differential geometry (conformal).

**CONFORMAL MAPPING.** See: differential geometry; functions of complex variables.

**CONIC SECTIONS.** See: geometry (elementary).

**CONJUGATE FUNCTIONS.** See: Fourier series (conjugate functions).

**CONSTRUCTIONS.** See: geometry (theory of constructions); logic (formal).

**CONTINGENT.** See: differential geometry (set-theoretical methods); functions of real variables (differentiation).

**CONTACT TRANSFORMATIONS.** Cf. Differential equations (infinitesimal transformations); differential geometry; groups (continuous).

Ostrowski, A. 44 Nagabhushanam, K. 156  
Foster, M. 113 Schwerdtfeger, H. 184

**CONTINUED FRACTIONS AND GENERALIZATIONS.**

Ficken, F. A. 265

**General theory.**

Wall, H. S.	8	Bradshaw, J. W.	81	Leighton, W.	
Levi, F. W.	66	Bullig, G.	133	+ Thron, W. J.	195
Leighton, W.		Glass, T. F.		Hellinger, E. D.	
Thron, W. J.	81	Leighton, W.	195	Wall, H. S.	244

**Special continued fractions.**

Bankier, J. D. 81 Stratton, J. A.-Morse,  
Leighton, W. 81 P. M.-Chu, L. J.-  
Mayer, A. E. 194 Hutner, R. A. 281

**Number-theoretical applications.** Cf. Diophantine approximations; number theory.

Bullig, G. 133

**CONTINUOUS GROUPS.** See: groups (continuous).

**CONTINUUM, PROBLEM OF.** See: sets (transfinite numbers).

**CONVERGENCE IN MEAN.** See: approximation; Fourier integrals (summability); Fourier series (convergence); functional analysis; polynomials (polynomial approximation); series (convergence).

**CONVEX BODIES AND SETS.** Cf. Differential geometry (differential geometry in the large; deformation); isoperimetric problems; number theory (geometry of numbers; lattice points).

Tukey, J. W.	13	Hadwiger, H.	112	Jamen, R. C.	224
Matsumura, S.	53	Feller, W.	168	Schoenberg, I. J.	247
Botts, T.	111	Santaló, L. A.	169	Newman, M. H. A.	252
Kakutani, S.	111	Alexandroff, A.	169	John, F.	252
Matsumura, S.	111	Allendorfer, C. B.		Santaló, L. A.	252
Santaló, L. A.	112	Weil, A.	169		

**CORRELATION.** See: statistics (correlation).

**COSMIC RAYS.** See: geophysics (cosmic rays).

**COSMOLOGY.** See: astronomy (cosmology).

**CREMONA TRANSFORMATIONS.** See: algebraic geometry (Cremona transformations).

**CRYSTALLOGRAPHY.** See: groups (crystallography).

**CURVES.** See: algebraic geometry; calculus (applications); differential geometry; functions of real variables (differentiation); geometry; topology.

**CYLINDRIC FUNCTIONS.** See: special functions (Bessel functions).

**DEFINITE INTEGRALS.** See: calculus (evaluation of integrals).

**DEMOGRAPHY.** See: actuarial mathematics (analysis of mortality); statistics (biometrics).

**DENJOY INTEGRALS.** See: measure and integration (Denjoy theory).

**DERIVATIVES, THEORY OF.** See: functions of real variables (differentiation); measure and integration (abstract theory).

### DESCRIPTIVE GEOMETRY.

Flemer, W. W. 111 Garvey, S. J. 284  
Walker, G. L. 111 Hetzel, K. W. 284

**DETERMINANTS.** See: algebra: linear (matrices; special matrices); numerical methods (systems of linear equations).

**DIFFERENCES: FINITE.** Cf. Interpolation; numerical methods (differences).

Rabin, J. 193

### Summation formulas.

Fort, T. 79 Guinand, A. P. 98 Kendall, D. G. 157

### Difference equations.

Kerawala, S. M. 69 Gardner, M. F. 150  
Barnes, J. L. 150

**Generalized difference equations.** Cf. Differential equations (applications of integral transforms); functional equations; special functions (functions defined by functional equations).

Bugchi, H. D. 145 Wilson, E. R. 201 Bhattacharya, H. J. 291  
Azevedo do Amaral, I. M. 145 Burke, M. H. 201 Chakrabarty, S. K. 291

**DIFFERENTIAL EQUATIONS.** Cf. Astronomy; calculus of variations; contact transformations; differences (generalized difference equations); differential geometry; functional analysis (existence theorems); integral equations; invariants (differential); mechanics; numerical methods (differential equations); operational calculus.

\*Keller, E. G. 150 \*Margenau, H. 268  
Murphy, G. M. 268

### Elementary methods of integration.

Sedgwick, W. F. 99 Azevedo do Amaral, Vicente Gonçalves, J. 157  
González, M. O. 99 I. M. 99

### Algebraic equations.

Kolchin, E. R. 72 Riblet, H. J. 198 Ritt, J. F. 277

### Ordinary equations: existence and behavior of solutions.

Butler, Z. 42 Mammans, G. 43 Butenin, N. 143  
Segond, M. 42 Makai, E. 43 Boas, M. L.-Boas, 143  
Bögel, K. 42 Newell, H. E., Jr. 99 R. P., Jr. 143  
Levinson, N. 42 Whyburn, W. M. 100 Levinson, N. 158  
Smith, O. K. 42 Aronson, W. M. 100 Langer, R. E. 198  
Caccioppoli, R. 42 Kryloff, N. 142 Bulgakov, B. V. 245  
Wittich, H. 42 Bogoluboff, N. 142 Quade, W. 245  
Ascoli, G. 42 Lefschetz, S. 142 Müller, M. 275  
Jeffreys, H. 43 Bulgakov, B. V. 142 Niemytski, V. 276  
Pougatcheff, V. 43

### Ordinary linear equations.

Butler, Z. 42 Boas, M. L.-Boas, Scheffé, H. 275  
Jeffreys, H. 43 R. P., Jr. 143 Haupt, O. 276  
Pougatcheff, V. 43 Levinson, N. 158 Seifert, H. 276  
Newell, H. E., Jr. 99 Pugschov, V. S. 158 Abdelhay, J. 276  
Reid, W. T. 100 Chiellini, A. 198 Kamke, E. 277  
Bobonis, A. 200 Azevedo do Amaral, I. M. 279  
Mansfield, R. 200 Malkin, I. G. 225

**Nonlinear oscillations.** Cf. Mechanics (oscillations); mechanics of continua (wave propagation).

Bögel, K. 42 Lefschetz, S. 142 Bulgakov, B. V. 275  
Levinson, N. 42 Bulgakov, B. V. 142 Friedrichs, K. O. 275  
Smith, O. K. 42 Butenin, N. 143 Stoker, J. J. 275  
Weinstein, A. 116 Bulgakov, B. V. 245 Niemytski, V. 276  
\*Kryloff, N. 142 Zech, T. 275  
Bogoluboff, N. 142

**Ordinary equations: special types.** Cf. Ballistics; calculus (applications); special functions.

Kasner, E. 54 Kasner, E. 198 Terracini, A. 256  
Terracini, A. 54 Kasner, E.-De Stratton, J. A.-Morse, 256  
Kasner, E.-De Cicco, J. 226 P. M.-Chu, L. J.- 281  
Cicco, J. 54 Frösel, W. 229 Hutner, R. A. 281

### Total equations, Pfaff problem.

Ostrowski, A. 44

### DIFFERENTIAL EQUATIONS. (Continued)

#### Partial equations, first order, systems, etc.

Ince, E. L. 43 Azevedo do Amaral, Gunther, N. 158  
Robinson, L.-B. 44 I. M. 99 Azevedo do Amaral, I. M. 279  
Frucht, R. 113  
Saltykow, N. 143

#### Partial equations: second order: general theory.

Ince, E. L. 43 Bergman, S. 159  
Lahaye, E. 44 Faber, K. 246

**Partial equations: second order: elliptic.** Cf. Electricity; harmonic functions; mechanics of continua; potential theory.

Gevrey, M. 143 Brachkovsky, B. Z. 159 Frösel, W. 229  
Biben, G. 144 Behrholm, H.- 159 Bleuler, K. 245  
Nielsen, K. L.- 159 Pini, M. 159  
Ramsay, B. P. 159

**Partial equations: second order: parabolic.** Cf. Diffusion; heat conduction; mechanics of continua.

Koistiz, V. A. 145 Archibald, W. J. 145 Rocard, Y.-Véron, M. 176

**Partial equations: second order: hyperbolic.** Cf. Electricity (waves); geophysics; mechanics of continua (wave propagation); potential theory.

Hadamard, J. 44, 45 Lapauri, I. D. 91 Rose, M. E. 199  
Bickley, W. G. 45 Badesco, R. 101 Faber, K. 246  
Owens, G. 45 Wilson, J. T. 101 Sauer, R. 260  
Tranter, C. J. 45 Sen, N. R. 144 Martin, M. H. 278  
Green, G. 45 Friedlander, F. G. 160

**Partial equations of higher order.** Cf. Mechanics of continua.

Valciras, A. 140 John, F. 279

**Infinitesimal transformations.** Cf. Contact transformations.

Robinson, L.-B. 44 Behrholm, H.- 260  
Nagabhushanam, K. 158 Pini, M. 159 Sauer, R. 260

**Applications of integral transforms: ordinary and partial.** Cf. Operational calculus.

Opatowski, I. 17 Titchmarsh, E. C. 100 Azevedo do Amaral, I. M. 279  
Tranter, C. J. 45 Badesco, R. 101  
Jaeger, J. C. 46 Heine, A. E. 198 Bhattacharya, H. J.- 291  
Pugh, H. L. D.- 199 Rose, M. E. 199 Chakrabarty, S. K. 291  
Harris, A. J. 46 Curry, H. B. 245

**Boundary value and expansion problems, characteristic values: ordinary and partial.** Cf. Harmonic functions (Dirichlet problem).

Caccioppoli, R. 42 Aronson, N. 100 Langer, R. E. 198  
Pougatcheff, V. 43 Weinstein, A. 101 Heine, A. E. 198  
Mammans, G. 43 Gevrey, M. 143 Bobonis, A. 200  
Makai, E. 43 Sokolnikoff, I. S.- 200  
Jaeger, J. C. 46 Specht, R. D. 144 Mansfield, R. 244  
Sergel, G. 97 Infeld, L. 144 Minakshisundaram, S. 246  
Hille, E. 97 von Sanden, H. 149  
Reid, W. T. 100 Pugachev, V. S. 158 Abdelhay, J. 276  
Whyburn, W. M. 100 Vecova, N. P.- 277  
Titchmarsh, E. C. 100 Kresselawa, D. A. 161  
Aronson, N. 100

**Differential operators and differential equations of infinite order.** Cf. Functional analysis (operators).

Muggli, H. 100

### DIFFERENTIAL GEOMETRY.

\*Lane, E. P. 114

**Set-theoretical methods (natural and finite differential geometry).** Cf. Functions of real variables (differentiation); geometry (abstract metrics).

Deknatel, J. 4 Busemann, H. 109 Denk, F.-Haupt, O. 113  
Levi, B. 54 Comenets, G. 112 Friedlander, F. G. 170  
Mirquet, J. 55 Blumenthal, L. M. 112 v. Sz. Nagy, G. 251

**Classical differential geometry in general.** Cf. Contact transformations.

Gheorghiu, G. T. 53 Friedlander, F. G. 170 Levi, B. 257  
Turriére, E. 113 Williams, M. H. 170 Friedlander, R. 257  
Abramson, N. 113 Santaló, L. A. 170 Heine, C.-C. 257  
Frucht, R. 113 Vest, M. L. 170 Chang, S.-C. 257  
Vest, M. L. 114 Santaló, L. A. 257 Anas, M. 257

**Kinematical methods.** Cf. Mechanics (kinematics).

Feid, J. M. 54 Shor, J. B. 174

**Special mapping problems.** Cf. Geodesy (elementary).

Flemer, W. W. 111  
Walker, G. L. 111

**DIFFERENTIAL GEOMETRY.** (Continued)

**Special curves and surfaces.** Cf. Calculus (applications).

Brauer, K.	Bagchi, H.	53
Müller, H. R.	Foster, M.	113

**Minimal surfaces.** Cf. Calculus of variations (minimal surfaces).

Loneeth, A. T.	49
----------------	----

**Families and nets of curves, webs.**

Gheorghiu, G. T.	53	Coburn, N.	171
Choudhury, A. C.	113	Bortolotti, E.	256

**Differential line geometry.** Cf. Geometry (lines).

Grove, V. G.	53	Vest, M. L.	114, 170	Galvani, O.	171, 259
--------------	----	-------------	----------	-------------	----------

**Laguerre and other sphere geometries.** Cf. Geometry (lines).

Matsumura, S.	53
---------------	----

**Geometry of lineal and higher space elements.**

Loong, C.-H.	51	DeCicco, J.	256
Feld, J. M.	54	Terracini, A.	256

**Differential geometry in the large, integral geometry.** Cf. Convex bodies; isoperimetric problems.

Hadwiger, H.	112	Allendoerfer, C. B.	169	Radhakrishna Rao, C.	248
Santaló, L. A.	169	Weil, A.	169	Santaló, L. A.	252
Alexandroff, A.	169	Siegel, C. L.	242		

**Geometry on surfaces, characterization by intrinsic properties.**

Botella Raduán, F.	10	Allendoerfer, C. B.	169	Anas, M.	257
Blanc, C.-Fiala, F.	53	Weil, A.	169	Schaeff, W.	257
Springer, C. E.	113	Santaló, L. A.	257	Wagner, V.	257
Alexandroff, A.	169	Levi, B.	257		

**Riemannian geometry.** Cf. Relativity; vector calculus (tensors).

Botella Raduán, F.	54	Allendoerfer, C. B.	169	Wagner, V.	257
Ghosh, N. N.	54	Weil, A.	169	Wong, Y.-C.	258
Band, W.	55	Galvani, O.	171	Shabbar, M.	259
Coburn, N.	115	Walker, A. G.	171	Galvani, O.	259
Ghosh, N. N.	115	Goncalves			
Davies, E. T.	115	Miranda, M.	172		

**Conformal, affine and projective differential geometry.**

Robinson, L.-B.	44	Kaener, E.-De	54	Chern, S.	171
Gheorghiu, G. T.	53	Cicco, J.	54	Hafung, C.-C.	257
Matsumura, S.	53	*Lane, E. P.	114	Bell, P. O.	
Grove, V. G.	53	Sprague, A. H.	115	Foreman, W. C.	258
Kaener, E.	54	Choudhury, A. C.	115	Coburn, N.	258
Terracini, A.	54	Bachin-Su.	171	Wong, Y.-C.	258
		Prokhorov, V.	171		

**Paths and connections.** Cf. Vector calculus (tensors).

Galvani, O.	171	Chern, S.	171	Galvani, O.	259
-------------	-----	-----------	-----	-------------	-----

**Finsler spaces, abstract spaces and other generalizations.** Cf. Calculus of variations (generalized); geometry (abstract metrics); vector calculus (tensors).

*Busemann, H.	109	Lichnerowicz, A.	226	Chern, S.	259
---------------	-----	------------------	-----	-----------	-----

**DIFFERENTIAL INVARIANTS.** See: invariants (differential).

**DIFFERENTIATION AND INTEGRATION OF FRACTIONAL ORDER.**

Hardy, G. H.	Favard, J.	74
Littlewood, J. E.	8	

**DIFFUSION.** Cf. Heat conduction; probability (Markoff chains); statistical mechanics.

Doob, J. L.	17	Lucas, R.	207	Chandrasekhar,	
Leibenson, L.	101	Christianovitch, S. A.	208	S.	248, 260
Householder, A. S.	202				

**DIOPHANTINE APPROXIMATIONS.** Cf. Continued fractions (approximations; metric theory).

Pillai, S. S.	36	Rédei, L.	266	Sambasiva Rao, K.	
				Nagabhushanam,	
				K.	240

**Transcendancy problems.**

Hille, E.	191	Pisot, C.	266
-----------	-----	-----------	-----

**DIOPHANTINE EQUATIONS.** See: number theory (Diophantine equations).

**DIRECT DIFFERENTIAL GEOMETRY.** See: differential geometry (set-theoretical methods).

**DIRICHLET SERIES.** Cf. Almost periodic functions; Fourier integrals; number theory (theory of primes; analytic theory; analytical tools).

Mandelbrojt, S.	98	Lantz, G.	218
Ulrich, F. E.	72	Servint, G.	218

**Zeta functions and other special Dirichlet series.**

Titchmarsh, E. C.	131	Wintner, A.	217	Siegel, C. L.	242
Siegel, C. L.	189	Tchudakoff, N.	240	Titchmarsh, E. C.	263

**DISTRIBUTION FUNCTIONS.** See: Fourier integrals (Fourier-Stieltjes integrals); moments; probability (distribution functions); statistics (frequency functions).

**DIVERGENT SERIES.** See: series (divergent).

**DIVISIONS OF SPACE.** See: geometry (regular figures); groups (crystallography).

**DOUBLE STARS.** See: astronomy.

**DYNAMICAL METEOROLOGY.** See: geophysics (meteorology).

**DYNAMICS.** See: astronomy; mechanics (dynamics); symbolic dynamics.

**ECONOMICS.** Cf. Actuarial mathematics (mathematics of finance).

Kimball, B. F.	109	Haavelmo, T.	230
Lange, O.	109	Loew, C. E. V.	281

**EIGENVALUES.** See: algebra: linear (characteristic values); differential equations (boundary value problems); functional analysis (existence theorems); integral equations; numerical methods (differential equations).

**ELASTICITY.** See: mechanics of continua (elasticity).

**ELECTRICITY.**

**General theory.** Cf. Quantum mechanics; relativity.

Gross, B.	31	Jougnot, M.	151	Tichonov, A. N.	234
Stephan, J.	31	Roubaud-Valette, J.	151	Milne, E. A.	283
Podolsky, B.	31	Cattermole, J.	151	Borgnis, F.	283
Schrödinger, E.	31	Milne, E. A.	226, 227	Meinke, H.	288
Lifshitz, J.	94	Rocard, V.	233	Middleton, D.	288
Higgins, T. J.	151	Tichonov, A. N.		König, H.	289
Searle, G. F. C.	151	Turkisher, R. J.	234	Picht, J.-Himpan, J.	289

**Waves and radiation.** Cf. Optics.

Magnus, W.	32	Hsi, C.-P.	93	Schriever, O.	286
Cherry, E. C.	32	Sullivan, W. L.	93	Ginsburg, V.	287
Bivlin, R. S.	32	Jougnot, M.	151	Försterling, K.	287
Bewley, L. V.	32	Ginsburg, V. L.	151	Goubau, G.	287
Pipes, L. A.	92	Ramchandran, G. N.	151	Grünberg, G. A.	287
Schellkunoff, S. A.	92	Schellkunoff, S. A.	204	Sommerfeld, A.	287
Feldman, C. B.	92	Weber, E.	204	Renner, F.	287
Kofink, W.	92	Grünberg, G.	205	Gronskopf, J.	287, 288
Menzel, E.	93	Condon, E. U.	205	Harrison, C. W., Jr.	288
Spence, R. D.	93	Maiti, M. G.	205	Borgnis, F.	288
Weila, C. P.	93	Golomb, M.	205	Meinke, H.	288
Weber, E.	93	Dive, P.	226	Middleton, D.	288

**Potentials.** Cf. Potential theory (special potentials).

Bertram, S.	91	Dwight, H. B.	93	Gronskopf, J.	287, 288
Frankel, S.	93	Higgins, T. J.	94	Poritsky, H.	289

**Networks.** Cf. Operational calculus.

Tellegen, B. D. H.	32	*Gardner, M. F.		Higgins, T. J.	206
Sullivan, W. L.	93	Barnes, J. L.	150	Banerjee, S. S.	
Millman, J.	94	Kron, G.	151	Tiwari, S. Y.	234
Coulthard, W. B.	94	Higgins, T. J.	151	Schellkunoff, S. A.	234
Whiteman, R. A.	94	Riordan, J.	151	Pipes, L. A.	288
Waldelich, D. L.	94	Shannon, C. E.	151	Maa, D.-Y.	289
Higgins, T. J.	94	Gross, B.	157	West, S. S.	289
Pipes, L. A.	122	Maiti, M. G.	205	Wiechowski, W.	289
*Keller, E. G.	150	Golomb, M.	205	Poritsky, H.	289
		Gross, B.	206		

**Technical applications.**

Grünberg, G. A.		Pipes, L. A.	92	Rice, S. O.	205
Kontorovitch,		*Keller, E. G.	150	König, H.	289
M. I.-Lebedev,		Condon, E. U.	205		
N. N.	32				

**ELEMENTARY DIVISORS.** See: algebra: linear (characteristic values).



**ELEMENTARY GEOMETRY.** See: geometry (elementary).

**ELIMINATION, THEORY OF.** See: algebra: abstract; algebra: equations (systems); invariants (algebraic).

**ELLIPTIC DIFFERENTIAL EQUATIONS.** See: differential equations; electricity; functional analysis (existence theorems); harmonic functions; mechanics of continua; numerical methods (differential equations); potential theory.

**ELLIPTIC FUNCTIONS AND RELATED TOPICS.** Cf. Algebraic functions.

**Elliptic functions and integrals.**

Kopal, Z.	73	Lowan, A. N.-Blanch,	Segal, B. I.	148
Sharma, J. L.	82	G.-Horestein, W.	Hasse, H.	239
		Subba Rao, M. V.	Robinson, R. M.	241

**Theta functions.**

Basco, M. A.	198
--------------	-----

**Automorphic and modular functions.**

Siegel, C. L.	242, 243
---------------	----------

**ENTIRE FUNCTIONS.** See: functions of complex variables.

**EQUIDISTRIBUTION FUNCTIONS.** See: Diophantine approximations (equidistribution problems).

**EQUILIBRIUM, FIGURES OF.** See: astronomy (figures of equilibrium).

**ERGODIC THEORY.** Cf. Measure and integration; probability (Markoff chains); statistical mechanics; symbolic dynamics.

Maharam, D.	12	Wiener, N.-	Doob, J. L.-	
Day, M. M.	14	Wintner, A.	Leibler, R. A.	219
Kakutani, S.	14	Birkhoff, G. D.	Pitt, H. R.	219
Siegel, C. L.	14	Blackwell, D.	Wiener, N.-	
Halmos, P. R.-von		Doob, J. L.	Wintner, A.	220
Neumann, J.	14	Birkhoff, G. D.	Hartman, P.-	
			Wintner, A.	226

**ERRORS, THEORY OF.** Cf. Numerical methods (differences); statistics.

Stephan, F. F.	24	Gebelein, H.	104	Berjman, E.	283
Lonseth, A. T.	90	Nair, K. R.-		Korff, G.	284
Banachiewicz, T.	90	Shrivastava, M. P.	279		

**ESTIMATION, STATISTICAL.** See: statistics (sampling theory).

**EULER'S FORMULA.** See: differences (summation formulas); numerical methods; series (divergent).

**EULER'S NUMBERS.** See: differences; series (special sequences).

**EXPANDING UNIVERSE.** See: astronomy (cosmology); relativity.

**EXPANSIONS OF FUNCTIONS.** See: approximation.

**EXTREMAL PROBLEMS.** See: calculus of variations; Fourier series (extremal problems); functions of complex variables (extremal problems); inequalities (extremal problems); isoperimetric problems; polynomials (extremal problems).

**FACTORIAL SERIES.** See: series (power series).

**FERMAT.** See: number theory.

**FIELDS.** See: algebra: abstract; number theory.

**FIGURES OF EQUILIBRIUM.** See: astronomy (figures of equilibrium).

**FINANCE, MATHEMATICS OF.** See: actuarial mathematics (mathematics of finance).

**FINITE GEOMETRY.** See: differential geometry (set-theoretical methods); elementary geometry (geometry in fields).

**FINSLER SPACES.** See: calculus of variations (generalized geometrical theory); differential geometry (Finsler spaces); geometry (Minkowski geometry; abstract metrics).

**FIXED POINTS.** See: Fourier integrals (self-reciprocal functions); functional analysis (fixed points); topology.

**FORMS, THEORY OF.** See: algebra: linear; number theory (theory of forms).

**FOUNDATIONS.** See: geometry (foundations); intuitionism; logic; philosophy; probability (foundations); sets (axiomatics).

**FOUR-COLOR PROBLEM.** See: topology (graphs).

**FOURIER INTEGRALS, INTEGRAL TRANSFORMS.** Cf. Differential equations (applications); number theory (analytical tools); numerical methods (practical harmonic analysis).

**General theory.**

Tueng, Y. V.	13	Watson, G. N.	142	Wintner, A.	217
Pi Calleja, P.	40	Kendall, D. G.	157	Bellman, R.	272

**Fourier-Stieltjes integrals, distribution functions.** Cf. Moments; probability (distribution functions).

Cramér, H.	13	Barnard, R. W.	Bochner, S.-	
Hartman, P.-		Goldstine, H. H.	Phillips, R. S.	218
Wintner, A.	18			

**Hilbert transforms.**

Kober, H.	40	Gama, L. L.	98
Gross, B.	98	Levi, B.	98

**Laplace integrals.** Cf. Completely monotone functions; Dirichlet series; operational calculus.

Rey Pastor, J.	40	Royall, N. N., Jr.	98	Lantz, G.	218
Rios, S.	40	Mital, P. C.	99	Bochner, S.	247

**Mellin, Hankel and other transforms.**

Hille, E.	13	Gross, B.	98	Gross, B.	157
Pi Calleja, P.	40	Gama, L. L.	98	Hille, E.	163
Varma, R. S.	40	Levi, B.	98	Rogosinski, W. W.	195
Mohan, B.	40	Mital, P. C.	99	Fuchs, W. H. J.-	
Benerjee, D. P.	40	Guinand, A. P.	157	Rogosinski, W. W.	272
Garabedian, H. L.	80				

**Inversion formulas.**

Gross, B.	98	Levi, B.	98
Gama, L. L.	98	Rao, D. V. B.	98

**Self-reciprocal functions and generalizations.**

Varma, R. S.	40	Banerjee, D. P.	40
Mohan, B.	40	Guinand, A. P.	157

**FOURIER SERIES, TRIGONOMETRIC SERIES.** Cf. Almost periodic functions; numerical methods (practical harmonic analysis).

**Trigonometric polynomials.**

Wiener, N.-		Pólya, G.-Wiener, N.	97	Duffin, R. J.-	
Wintner, A.	15	Szegő, G.	97	Eachus, J. J.	97
Tchebotarow, N.	67	Hille, E.	97	Tchebotarow, N.	195
				Szegő, G.	244

**Fourier coefficients, degree of approximation.**

Hardy, G. H.	36	Zygmund, A.	76	Salem, R.	217
Kiang, S.	37	Mohanty, R. N.	97	Szász, O.	244
Salem, R.	38	Šilov, G. E.	156	Wintner, A.	244

**Convergence, summability.**

Szász, O.	37	Šilov, G. E.	156	Chow, H. C.	244
Wang, F. T.	37	Salem, R.	156	Szász, O.	244
Chow, H. C.	37, 38	Cheng, M.-T.	156	Erdős, P.	271
Herriot, J. G.	38	Hille, E.	163	Wang, F. T.	272
Young, L. C.	39	Wang, F. T.	217	Cheng, M.-T.	272
Zygmund, A.	76	Loo, C. T.	244	Chen, K.-K.	272
Mohanty, R. N.	97				

**Conjugate functions.**

Chow, H. C.	244	Chen, K.-K.	272
-------------	-----	-------------	-----

**Uniqueness theory.**

Salem, R.	38, 217
-----------	---------

**Double series.**

Herriot, J. G.	38	Reves, G. E.-Szász, O.	217
Lepecki, Z.	157	Hedge, L. B.	272



**FOURIER SERIES, TRIGONOMETRIC SERIES.** (Continued)

**Generalized Fourier series.** Cf. Approximation.

Wiener, N.		Duffin, R. J.		Bochner, S.	
Wintner, A.	15	Eachus, J. J.	97	Phillips, R. S.	218
Hartman, P.	39	Wintner, A.	217		

**FRACTIONAL DIFFERENTIATION AND INTEGRATION.** See: differentiation of fractional order.

**FREQUENCY FUNCTIONS.** See: probability; statistics.

**FUNCTIONAL ANALYSIS.** Cf. Measure (abstract theory); symbolic dynamics; topology.

**Abstract spaces.** Cf. Differential geometry (Finsler spaces); functions of real variables (functions in abstract spaces); sets.

Morrey, C. B., Jr.	5	Tseng, Y. Y.	13	Bochner, S.	
*Halmos, P. R.	11	Cramér, H.	13	Phillips, R. S.	218
Randall, M.		Hille, E.	13	Pincher, A.	219
Longtin, B.	12	Schatten, R.	161	Sivint, U.	223
Taylor, A. E.	12	Wasilukoff, D.	162	Ellenberg, S.	224
Smiley, M. F.	12	Smulian, V.	162	Fox, R. H.	224
Mackey, G. W.	12	Rickart, C. E.	162	Bourgin, D. G.	247
Snapper, E.	13	Hille, E.	163	Bohnenblust, F.	247
Tukey, J. W.	13	Phillips, R. S.	218	Schoenberg, I. J.	247
				Bochner, S.	247

**Operators, rings of operators.** Cf. Differential equations (differential operators); ergodic theory.

Mackey, G. W.	12	Kakutani, S.	14	Hille, E.	163
Hille, E.	13	Halmos, P. R.-von		Bailey, R. P.	219
Duraffon y Vedia, A.	13	Neumann, J.	14	Pincher, A.	219
Nakano, H.	13	Julia, G.	163	Sivint, U.	219
Day, M. M.	14				

**Equations in infinitely many variables.** Cf. Differential equations (differential operators).

Hellinger, E. D.					
Wall, H. S.	244				

**Existence theorems for differential, integral and functional equations; spectral theory.**

Vecoua, N.	83	Lefschetz, S.	142	Doob, J. L.	
Aronszajn, N.	100	Goldstone, H. H.	201	Leibler, R. A.	219
				Lorch, E. R.	247

**FUNCTIONAL DETERMINANTS.** See: calculus.

**FUNCTIONAL EQUATIONS: SPECIAL TYPES.** Cf. Differences (difference equations; generalized difference equations); functional analysis (existence theorems); operational calculus; special functions (functions defined by functional equations).

Cameron, R. H.	84	Bourzait, J.	140	Bagchi, H. D.	145
Schönberg, M.	84	Ghermanescu, M.	145	Azevedo do Amaral, I. M.	145

**FUNCTIONAL SPACES.** See: differential geometry (Finsler spaces); functional analysis; measure and integration; topology (topological spaces; applications).

**FUNCTION FIELDS.** See: algebra: abstract (function fields); algebraic functions; number theory (analytic theory).

**FUNCTIONS OF COMPLEX VARIABLES.** Cf. Algebraic functions; Dirichlet series; elliptic functions; Fourier integrals (Laplace integrals; Mellin transforms; self-reciprocal functions); harmonic functions; number theory (analytic tools).

**Power series.** Cf. Series (power series).

Macintyre, A. J.		Hardy, G. H.		Zygmund, A.	76
Wilson, R.	7	Littlewood, J. E.	8	Shah, S. M.	137
Pólya, G.	7	Szász, O.	37	Pólya, G.	192
Wall, H. S.	8	Siegel, C. L.	76	Loe, C. T.	244
		Manning, R.	76		

**Zeros.** Cf. Polynomials (zeros).

af Hällström, G.	7	Shah, S. M.	137	Pontrjagin, L.	214
Higgins, T. J.	90	Gontcharoff, W.	155	Tschebotarow, N.	214
Szegő, G.	97	Pólya, G.	192	Levi, B.	282
Hille, E.	97				

**Analytic continuation, singularities, overconvergence.**

Macintyre, A. J.		Rios, S.	40	Agnew, R. P.	81
Wilson, R.	7	Mandelbrojt, S.		Vijayaraghavan, T.	155
Pólya, G.	7	Ulrich, F. E.	72	Cotlar, M.	155
Wall, H. S.	8	Pompeiu, D.	76	Wolf, F.	278

**FUNCTIONS OF COMPLEX VARIABLES.** (Continued)

**Cauchy integral and related topics.** Cf. Calculus (contour integrals).

Wavre, R.	6	Maker, P. T.	136	Radell, E.	
Tolstoff, G.	136	Vicente Gonçalves, J.	241	González, M. O.	270

**Schwarz lemma, Phragmén-Lindelöf principle and related topics.**

Robinson, R. M.	241
-----------------	-----

**Conformal mapping: general theory.**

Panero, V.	9	Kwoselawa, D.	77	Manzi, B.	217
Warschawski, S. E.	9	Gontcharoff, W.	155	Robinson, R. M.	241
Miser, H. J.	9	Green, J. W.	156	Schiffer, M.	271
Courant, R.	9	Kronsbein, J.	215	v. Koppensels, W.	271

**Conformal mapping: special problems and applications.** Cf. Calculus of variations (minimal surfaces); differential geometry.

Kravtchenko, J.	58	Ferrand, J.	139	Kalustyan, H.	241
Schiffer, M.	78	Kravtchenko, J.	175		

**Riemann surfaces, uniformization.** Cf. Topology (covering surfaces).

af Hällström, G.	7	Heina, M. H.	77	Seidel, W.	
Biggeri, C.	7	Dufresnoy, J.	138	Walsh, J. L.	215
Courant, R.	9	Ferrand, J.	138	Schiffer, M.	215
Botella Raduán, F.	10				

**Entire and meromorphic functions, distribution of values.**

Shah, S. M.	6	Boas, R. P., Jr.	136	Mandelbrojt, S.	155
Selberg, A.	6	Boas, R. P., Jr.		Leighton, W.	
af Hällström, G.	7	Schaeffer, A. C.	137	Thron, W. J.	195
Montel, P.	7	Shah, S. M.	137	Tschebotarow, N.	195, 214
Biggeri, C.	7	Ganapathy Iyer, V.	137	N.	
Seidel, W.		Fry, C. G.		Hughes, H. K.	214
Walsh, J. L.	10	Hughes, H. K.	137	Shah, S. M.	214
Wittich, H.	42	Spencer, D. C.	137	Macintyre, A. J.	
Biggeri, C.	76	Dufresnoy, J.	138	Wilson, R.	216
Weyl, H.-Weyl, J.	77	Lejone, P.	138	Weyl, J.	216
Pólya, G.-Wiener, N.	97	Ferrand, J.	138	Szegő, G.	244
Szegő, G.	97	Wolf, F.	144	Pisot, C.	270
Hille, E.	97	Garavito Armero, J.	155	Kober, H.	271
Muggli, H.	100	Tschebotarow, N.	155		

**Picard theorem and generalizations.**

Biggeri, C.	7	Seidel, W.		Sunyer Balaguer, F.	241
		Walsh, J. L.	215	Rademacher, H.	270

**Univalent functions, bounded functions and related topics.**

Rosenblatt, A.	7	Manning, R.	76	Kronsbein, J.	215
Chuang, C.-T.	8	Spencer, D. C.	76	Seidel, W.	
Carathéodory, C.	8	Robinson, R. M.	77	Walsh, J. L.	215
Hardy, G. H.	8	Spencer, D. C.	137, 138	Schiffer, M.	215
Littlewood, J. E.	8	Alenitsyna, G.	138	Grunsky, H.	270
Panero, V.	9	Cotlar, M.	155	Schiffer, M.	271
Zygmund, A.	76				

**Extremal problems, inequalities.** Cf. Inequalities; polynomials (extremal problems).

Rosenblatt, A.	7	Spencer, D. C.	137, 138	Schiffer, M.	215
Chuang, C.-T.	8	Wolf, F.	144	Macintyre, A. J.	
Hardy, G. H.	8	Green, J. W.	156	Wilson, R.	216
Littlewood, J. E.	8	Seidel, W.		Robinson, R. M.	241
Carathéodory, C.	8	Walsh, J. L.	215	Grunsky, H.	270
Schiffer, M.	78				

**Iteration.**

Siegel, C. L.	76
---------------	----

**Polynomial and other series expansions.** Cf. Approximation; polynomials (polynomial approximations).

Schiffer, M.	78	Tschebotarow, N.	195	Boas, R. P., Jr.	271
--------------	----	------------------	-----	------------------	-----

**Complex interpolation and approximation.** Cf. Interpolation.

Seidel, W.		Lammel, E.	10	Kober, H.	242, 271
Walsh, J. L.	10	*Sewell, W. E.	78		

**Quasi-analytic functions and monogenic functions.**

Mandelbrojt, S.		Tolstoff, G.	136	Valeiras, A.	140
Ulrich, F. E.	72	Maker, P. T.	136	Mandelbrojt, S.	155

**Other generalizations.**

Blanc, C.	78	Beckenbach, E. F.	135	Faber, K.	246
-----------	----	-------------------	-----	-----------	-----

**Several variables.**

Wachs, S.	10	Bergman, S.		Siegel, C. L.	242
Fueter, R.	139	Marcinkiewicz, J.	156	Bergman, S.	
Bers, L.	139	Bergman, S.	156, 159	Spencer, D. C.	243
Bergman, S.	140				

**Functions of quaternion variables.** Cf. Calculus (contour integrals).

Valeiras, A.	140
--------------	-----

**FUNCTIONS OF REAL VARIABLES AND GENERALIZATIONS.** Cf. Calculus; completely monotone functions; convex functions; functional analysis; inequalities; measure and integration; probability (random functions).

**One real variable.**

Jones, F. B.	4	Favard, J.	74	Poulkine, S.	213
Sen, H. K.	5	de Mira Fernandes, A.	75	Federer, H.	
Maximoff, I.	5	Schwartz, H. M.	154	Morse, A. P.	213
Vessiot, E.	74	Maximoff, I.	213		

**Several real variables.**

Morrey, C. B., Jr.	5	Kershner, R.	153	Reichelderfer, P. V.	213
Radó, T.	5	Sard, A.	153	Valentine, F. A.	269
Froda, A.	5	Scott, W.	155	Heisel, R. G.	
Chelidze, W.	75	Whitney, H.	192, 193	Radó, T.	269

**Differentiation and tangents.** Cf. Differential geometry (set-theoretical methods).

Romier, P.	5	Maximoff, I.	5	Blumenthal, L. M.	112
Šinkla, P. D.	5	Vessiot, E.	74		

**Nondifferentiable functions and related topics.**

Tamhe Lyche, R.	74	Lebesgue, H.	74
-----------------	----	--------------	----

**Functions in abstract spaces.**

Rosenthal, A.	5	Van der Lijn, G.	13	Wagner, R. W.	239
Pospišil, B.	11	Millspaugh, K.	218	Bochner, S.	247
Randall, M.		Bochner, S.			
Longtin, B.	12	Phillips, R. S.	218		

**GALOIS THEORY.** See: algebra: abstract (Galois theory); algebra: equations (classical Galois theory).

**GAMMA FUNCTIONS.** See: special functions (gamma function).

**GENETICS.** See: biological problems; statistics (biometrics).

**GEOMETRICAL OPTICS.** See: optics (geometrical).

**GEOMETRY.** Cf. Algebraic geometry; calculus (applications to geometry); contact transformations; continuous geometry; convex bodies; descriptive geometry; differential geometry; groups (group-theoretical problems of geometry); isoperimetric problems; topology; trigonometry; vector and tensor calculus.

\*Baker, H. F. 250

**Foundations.** Cf. Logic; philosophy.

Levi, F. W.	49	Loong, C.-H.	51	*Busemann, H.	109
Coxeter, H. S. M.	50	Peiser, A. M.	51	Baer, R.	109
Greenwood, T.	50	Thébault, V.	51	Greenwood, T.	127
Court, N. A.	51	Labra, M.	51	Everett, C. J.	166
Bioche, C.	51				

**Elementary geometry.** Cf. Topology (elementary).

Neumann, B. H.	51	Crain, K. W.	111	Sutton, R. M.	166
Mitra, A.	51	Hjelmslev, J.	166	Pedoe, D.	168
Etherington, I. M. H.	68	Terracini, A.	166	Gutiérrez Novoa, L.	193
Erdélyi, A.		Cobb, R. H.	166	Frailé, A.	251
Etherington, I. M. H.	68	Gonzales, M. O.	166	García Rúa, J.	252
Ionescu, D. V.	110	Müchler, W.	166	Hohenberg, F.	252
Mandan, R.	111	Yates, R. C.	166	Sanguineti, J.	252
Hameed, A.	111	Iyengar, K. V.	166	Labra, M.	252
Bilger, G.	111	Gasper, E.	166	Baldaff, B. I.	252
		Rey Pastor, J.	166		

**Theory of constructions.**

Kasner, E.		Peineke, H.	111
DeCicco, J.	54		

**Regular figures and divisions of space.** Cf. Elliptic functions (modular groups); groups (crystallography).

Bilger, G. 111

**Configurations.**

Ionescu, D. V.	110	Segre, B.	254
----------------	-----	-----------	-----

**Projective and analytic geometry.** Cf. Algebra: linear.

Halmos, P. R.	11	Baer, R.	109	*McCrea, W. H.	250
Levi, F. W.	49	Turnbull, H. W.	110	*Castellnuovo, G.	250
Silberstein, L.	50	Everett, C. J.	166	Prenowitz, W.	251
Frailé, V.-Frailé, A.-Crespo, C.	51	Baer, R. C.	237	Frailé, A.	251

**Geometry in the complex domain.**

Neumann, B. H.	51	Mitra, A.	51
----------------	----	-----------	----

**GEOMETRY. (Continued)**

**Geometry in fields.**

Baer, R.	109	Everett, C. J.	166
Baer, R. C.	33	Fisher, R. A.	127
*Levi, F. W.	49	Baer, R. C.	128

**Lines and higher space elements.** Cf. Differential geometry (differential line geometry; Laguerre geometries; geometry of lineal elements).

Srinivasan, C. N. 111

**Non-Euclidean geometry.**

*Coxeter, H. S. M.	50	Blanc, C.-Fiala, F.	53	Greenwood, T.	210
Silberstein, L.	50	Feld, J. M.	54		

**Minkowski geometry and other generalizations.** Cf. Differential geometry (Finsler spaces).

\*Busemann, H. 109 Siegel, C. L. 242

**Abstract metrics.** Cf. Calculus of variations (generalized geometrical theory); differential geometry (Finsler spaces); functional analysis (abstract spaces).

Busemann, H.	109	Wald, A.	220	Blumenthal, L. M.	
Menger, K.	163	Milgram, A. N.	249	Gillam, B. E.	250
				Blumenthal, L. M.	251

**GEOMETRY OF NUMBERS.** See: number theory (geometry of numbers).

**GEOPHYSICS.**

Grünberg, G. 205

**Hydrology.**

Gumbel, E. J.	29	Numerov, S. N.	119	Riesenkampf, B. K.	
Kimball, R. F.	29	Polubarinova		Kalinin, N. K.	329
Stockmann, W.	60	Kotachina, P. J.	119	Gantmacher, F. R.	
Beach Erosion Board	118, 119	Gumbel, E. J.	166	Segal, B. I.	229
Bondi, H.	119	Jeffreys, H.	229	Rosbach, H.	229
Jacob, C.	119	Haurwitz, B.	229	Fortier, A.	229
Pavlov, A. T.	119	Kalinke, A. A.	229	Unna, P. J. H.	260
Braginskaya, V. A.	119			Ertel, H.	262
				Elkina, T. A.	284

**Meteorology.**

Gumbel, E. J.	29	Schwer, M.	60	Haurwitz, B.	178, 229
Stewart, H. J.	59	Kazetsov, R. S.	161	Kalinke, A. A.	229
Hjiland, E.	60	Schmidt, W.	178	Shvets, M.	262
Van Mieghem, J.	60				

**Cosmic rays.**

Chapman, S.-Majid		Nordstieck, A.-Lamb, W. E., Jr.		Scott, W. T.	
Mian, A.	30	Uhlenbeck, G. E.	152	Uhlenbeck, G. E.	152
				Lifshitz, J.	227
				Tables	282

**Seismology.**

Jeffreys, H. 233

**Potentials.** Cf. Geodesy (higher).

Malkin, N.	102	Tichonov, A. N.		Tichonov, A. N.	234
Zamorev, A.	102	Turkisher, R. J.	234		

**GRADUATION.** See: errors; numerical methods (differences); statistics (frequency functions).

**GRAPHICAL METHODS.** See: numerical methods.

**GRAPHS.** See: mechanics (statics); topology (graphs).

**GRAVITATION.** See: astronomy (cosmology); geodesy (higher); geophysics (potentials); potential theory; relativity.

**GREEN'S FUNCTIONS.** See: differential equations; harmonic functions (Dirichlet problem); heat conduction.

**GROUPS.** Cf. Algebra: abstract; algebra: linear; elliptic functions (modular groups); topology.

**Finite groups.**

Miller, G. A.	1	Rutherford, D. E.	133	Miller, G. A.	191
Piccard, S.	1	Tovbin, A. V.	133	Lewis, F. A.	191
Brauer, R.	1, 2	Thrall, R. M.		Frucht, R.	191
Best, E.-Tausky, O.	2	Nesbitt, C. J.	134	Singer, J.	191
Suetuna, Z.	2	Thrall, R. M.	134	Frame, J. S.	192
Baer, R.	109	Hooke, R.	134	Miller, G. A.	266
Miller, G. A.	133	Richardson, A. R.	185	Brauer, R.	266
Benamont, R. A.	133	Albert, A. A.	186	Venkatarayudu, T.	267
Piccard, S.	133	MacLane, S.			
		Schilling, O. F. G.	187		

GROUPS. (Continued)

Abstract groups.

Best, E.-Tausky, O.	2	Levi, F. W.	133	Levi, F. W.	192
Levi, F. W.	2	Thrall, R. M.	134	Bruck, R. H.	238
Birkhoff, G.	3	Eilenberg, S.		Hammink, G.	267
Everett, C. J., Jr.	69	MacLane, S.	134	Baer, R.	267
Bruck, R. H.	71	Hopf, H.	173	Almeida Costa, A.	267
Ore, O.	128	Schwerdtfeger, H.	184		

Representations, characters.

Bräuer, R.	1, 2	Clifford, A. H.	4	Thrall, R. M.	134
Sostuna, Z.	2	Rutherford, D. E.	133	Frame, J. S.	192
Herring, C.	2	Thrall, R. M.		Venkatarayudu, T.	267
Halmos, P. R.		Nesbitt, C. J.	134		
Samuelson, H.	2				

Continuous, topological, Lie groups. Cf. Contact transformations; differential equations (infinite transformations).

Halmos, P. R.		Eilenberg, S.		Raikov, D.	219
Samuelson, H.	2	MacLane, S.	88	Pitt, H. R.	219
Chevalley, C.	2	Malcev, A.	130	James, R. C.	224
Montgomery, D.		Stiefel, E.	134	Eilenberg, S.	
Zipf, L.	3	Malcev, A.	135	MacLane, S.	224
Hopf, H.-Samuelson, H.	3	Hopf, H.	173	Montgomery, D.	
Smith, P. A.	3	Alexandroff, A. D.	192	Samuelson, H.	230
de Kerékjártó, B.	3	Bochner, S.		Almeida Costa, A.	267
Lefschetz, S.	84	Phillips, R. S.	218	Malcev, A.	267

Crystallography and divisions of space. Cf. Geometry (regular figures).

Miller, G. A.	1	Stiefel, E.	134	Lifshitz, E. M.	206
Herring, C.	2	Hopf, H.	173		

Group-theoretical problems of geometry in general.

Chevalley, C.	2	Eilenberg, S.		Hopf, H.	173
Levi, F. W.	49	MacLane, S.	134	Siegel, C. L.	242
Baer, R.	109	Stiefel, E.	134	Newman, M. H. A.	252
		Everett, C. J.	166		

Generalized groups.

Clifford, A. H.	4	Prenowitz, W.	251		
-----------------	---	---------------	-----	--	--

HANKEL TRANSFORMS. See: Fourier integrals (Mellin transforms).

HARMONIC ANALYSIS. See: Fourier series; numerical methods (practical harmonic analysis); statistics (time series).

HARMONIC FUNCTIONS AND GENERALIZATIONS. Cf. Mechanics of continua; potential theory.

General theory.

Hardy, G. H.		Brachkovsky, B. Z.	159	Biben, G.	245
Littlewood, J. E.	8	Beckenbach, E. F.		Stepanoff, W.	245
Wavre, R.	44	Reade, M.	199	Privaloff, I.	246
Sadosky, M.	44	Loomis, L. H.	199	Fedoroff, V. S.	277
Loomis, L. H.		Schiffer, M.	215	Wolf, F.	278
Widder, D. V.	101	Macintyre, A. J.		Beckenbach, E. F.	278
Bergman, S.	159	Wilson, R.	216		

Subharmonic functions. Cf. Convex functions.

Levin, J. H.	47	Transue, W. R.	246	Beckenbach, E. F.	278
Wolf, F.	144	Privaloff, I.	246	Privaloff, I.	278

Dirichlet problem and other boundary value problems. Cf. Differential equations (boundary value problems).

Weinberg, A. M.	44	Hantzschke, W.		Vecoua, N. P.	
Vecoua, I.	84	Wendt, H.	118	Kweselawa, D. A.	161
Aronszajn, N.		Sokolnikoff, I. S.		Heina, A. E.	198
Weinstein, A.	101	Specht, R. D.	144	Loomis, L. H.	199
Loomis, L. H.		Biben, G.	144	Manel, B.	217
Widder, D. V.	101	Behrbohm, H.		Lin, C. C.	261
Malkin, N.	102	Pinl, M.	159	Maruhn, K.	277
				Leonov, M. J.	277

Biharmonic functions.

Waschakidse, D.	149	Garnes, E. G.	278		
-----------------	-----	---------------	-----	--	--

Generalizations.

Blanc, C.	78	Blesler, K.	245	Minakshisundaram, S.	246
Bergman, S.	156	Biben, G.	245		

HEAT CONDUCTION. Cf. Differential equations; diffusion; probability (Markoff chains).

Green, G.	45	Pfriem, H.	91	Rocard, Y.	
Jaeger, J. C.	46	Jaeger, J. C.	144	Véron, M.	176
Mersman, W. A.	46	Kostitzin, V. A.	144, 145	Kuznetsov, E. S.	199
Pugh, H. L. D.		Mattioli, G. D.	145	Awberry, J. H.	247
Harris, A. J.	46	Mersman, W. A.	160	Carlaw, H. S.	247

HEAVISIDE CALCULUS. See: operational calculus.

HERMITE FORMS. See: algebra: linear (quadratic forms).

HERMITE POLYNOMIALS. See: interpolation; polynomials.

HILBERT SPACES. See: differential geometry (Finsler spaces); functional analysis; measure and integration; topology (topological spaces; applications).

HISTORY.

Miller, G. A.	65		
---------------	----	--	--

Ancient and medieval mathematics.

Whittaker, E. T.	65	von Erhardt, R.-von Erhardt, E.	181
------------------	----	---------------------------------	-----

Modern mathematics.

Levi, B.	65	Delevsky, J.	65	Ivina, W. M., Jr.	181
Chapman, S.	65	Whittaker, E. T.	65	Chant, C. A.	181
Bell, E. T.	65	Brasch, F. E.	65	Deha, M.-Hellingner,	
Santaló, L. A.	65	Fueter, E.	65	E. D.	181
Ferguson, A.	65	Zachakja, D.	65	Rufus, W. C.	181
von Kármán, T.	65	Kraft, M.	90	Birkhoff, G. D.	181
Sergescu, P.	65	Miller, G. A.	181	Karpinski, L. C.	181
Loria, G.	65	de Lomada y Puga, C.	181	Vera, F.	181
Richeson, A. W.	65	Kienle, H.	181	Whitman, E. A.	181
		Moorman, R. H.	181		

Astronomy and physics.

von Erhardt, R.-von Erhardt, Siebold, E.	65	Romafá, A.	65	Kienle, H.	181
Neugebauer, O.	65	von Erhardt, Siebold, E.	181	Birkhoff, G. D.	181

Biography of

Birkhoff, G. D.	65	Lebesgue, H.	65, 66	Volterra, V.	66
Chaplygin, S. A.	65	Levi-Civita, T.	66	Bolsa, O.	181
Forstny, A. R.	65	Nicolai, E. L.	66	Chaplygin, S. A.	181
Galerkin, B. G.	65	Picard, E.	66	Ljapunoff, B. M.	181

HYDRODYNAMICS. See: mechanics of continua.

HYDROLOGY. See: geophysics (hydrology).

HYPERBOLIC DIFFERENTIAL EQUATIONS. See: differential equations; electricity (waves); functional analysis (existence theorems); geophysics; mechanics of continua; numerical methods (differential equations).

HYPERCOMPLEX SYSTEMS. See: algebra: abstract; algebra: linear (hypercomplex systems).

HYPERGEOMETRIC FUNCTIONS. See: special functions (hypergeometric functions).

IDEAL THEORY. See: algebra: abstract (rings); number theory.

INDEX NUMBERS. See: economics (index numbers).

INEQUALITIES. Cf. Convex functions; Fourier series (extremal problems); functions of complex variables (extremal problems); isoperimetric problems; polynomials (extremal problems).

Erdős, P.-Szegő, G.	41	Pólya, G.-Wiener, N.	97	Shohat, J. A.	
Osoorio de Almeida, M.	72	Szegő, G.	97	Bushkovich, A. V.	193
Mandelbrojt, S.		Hille, E.	97	Walsh, C. E.	194
Ulrich, F. E.	72	Zygmund, A.	135	Kac, M.	194
Schiffer, M.	78	Iyengar, K. V.	135	Siegl, I. H.	220
Sewell, W. E.	78	Pólya, G.	192	Szegő, G.	244
				Frucht, R.	268

INFINITELY MANY VARIABLES. See: differential equations (differential operators); functional analysis (equations).

INSTRUMENTS. See: numerical methods (instruments).

INSURANCE. See: actuarial mathematics.

INTEGRAL AND INTEGRODIFFERENTIAL EQUATIONS. Cf. Functional analysis (existence theorems).

Integral equations.

Pitt, H. R.	83	Azevedo do Amaral,		Snow, C.	197
Collatz, L.	83	I. M.	99	Oberg, E. N.	218
Vecoua, N.	83	Sokolnikoff, I. S.	122	Bochner, S.	
Vecoua, I.	84	Mushkilvill, N. I.	160	Phillips, R. S.	218
Cameron, R. H.	84	Vecoua, I.	160	Glagolev, N. I.	264
Schönberg, M.	84	Vecoua, N. P.		Azevedo do Amaral,	
		Kweselawa, D. A.	161	I. M.	279



# **INTEGRAL AND INTEGRODIFFERENTIAL EQUATIONS.** (Continued)

## **Integrodifferential equations.**

Iyengar, K. S. K.	30	de Moraes, A.-	Ghermanescu, M.	145
Gross, B.	31	Schönberg, M.	Kusnetsov, E. S.	161
Hildebrand, F. B.	84	Schönberg, M.	Bronsky, A. P.	232
		Gevrey, M.		143

## **Special equations.**

Erdélyi, A.	140	Nordieck, A.-	Scott, W. T.-	
		Lamb, W. E., Jr.	Uhlenbeck, G. E.	152
		Uhlenbeck, G. E.	Kuznetsov, E. S.	161

**INTEGRAL GEOMETRY.** See: convex bodies; differential geometry (differential geometry in the large).

**INTEGRAL INVARIANTS.** See: invariants (differential).

**INTEGRAL MEANS.** See: convex functions.

**INTEGRALS OF FRACTIONAL ORDER.** See: differentiation of fractional order.

**INTEGRAL TRANSFORMS.** See: differential equations (applications); Fourier integrals.

**INTEGRATION, THEORY OF.** See: measure and integration.

**INTEGRODIFFERENTIAL EQUATIONS.** See: integral equations.

**INTERPOLATION: GENERAL THEORY.** Cf. Fourier series (trigonometric interpolation); functions of complex variables (complex interpolation); numerical methods (differences).

Schmidt, S.	39	Webster, M. S.	196
Laden, H. N.	196	Erdős, P.	273

## **Mechanical quadratures.**

Lowan, A. N.-Davida,	Shohat, J. A.-	Kowalewski, G.	273
N.-Levenecq, A.	Bushkovitch, A. V.	Garnes, E. G.	278
	Laden, H. N.		196

**INTUITIONISM.** Cf. Logic; philosophy.

Chandrasekharan, K. 126

## **INVARIANTS.**

### **Algebraic invariants.**

Wade, T. L.	51	Turnbull, H. W.	110	Edge, W. L.	167
-------------	----	-----------------	-----	-------------	-----

### **Differential and integral invariants.**

Lepage, T.	143	Chellini, A.	198	Arf, C.	237
------------	-----	--------------	-----	---------	-----

**INVERSION FORMULAS.** See: Fourier integrals (inversion formulas).

**IRRATIONAL NUMBERS.** See: continued fractions; Diophantine approximations; logic (foundations); number theory (algebraic).

**IRREDUCIBILITY.** See: algebra: equations (zeros); polynomials (irreducibility).

**ISOPERIMETRIC PROBLEMS AND GEOMETRICAL INEQUALITIES.** Cf. Calculus of variations (isoperimetric problems); convex bodies.

Neumann, B. H.	51	Moran, P. A. P.	153	John, F.	252
Matsumura, S.	111	Pedoe, D.	168	Kaemer, E.	252
Hadwiger, H.	112	Feiler, W.	168	Kaemer, E.	
Stewart, B. M.	112	Santaló, L. A.	169	Comenetz, G.-	
				Wilkes, J.	252

**ITERATION.** See: functions of complex variables (iteration).

**KINEMATICS.** See: differential geometry (kinematical methods); mechanics (kinematics).

**KNOTS.** See: topology (knots).

**LAGUERRE POLYNOMIALS.** See: interpolation; polynomials.

**LAMÉ FUNCTIONS.** See: special functions (Legendre functions).

**LAPLACE INTEGRALS AND TRANSFORMS.** See: differential equations (applications); Dirichlet series; Fourier integrals (Laplace integrals); operational calculus.

**LATTICE POINTS.** See: number theory (lattice points).

**LATTICE POTENTIALS.** See: potential theory (lattice potentials).

**LATTICES.** Cf. Algebra: abstract (lattices).

Birkhoff, G.	3	Pitcher, E.-Smiley,	Braithwaite, R. B.	238
Pospisil, B.	11	M. F.	Yosida, K.	247
Olsted, J. M. H.	11	Newman, M. H. A.	Smiley, M. F.-	
Maharam, D.	11, 12	Chandrasekharan, K.	Transue, W. R.	248
Klein-Barmen, F.	69	Ore, O.	Smiley, M. F.	248
Wilcox, L. R.	69	Whitman, P. M.	Prenowitz, W.	251
Newman, M. H. A.	70	Krishnan, V. S.	Carathéodory, C.	266
Duthie, W. D.	74	Monteiro, A.-	Erdős, P.-Tarski, A.	269
		Ribeiro, H.		223

**LEAST SQUARES.** See: errors.

**LEBESGUE THEORY.** See: functions of real variables; measure and integration.

**LEGENDRE FUNCTIONS.** See: interpolation; polynomials; special functions (Legendre functions).

**LIE GROUPS.** See: differential equations (infinitesimal transformations); groups (continuous).

**LINEAR ALGEBRA.** See: algebra: abstract; algebra: linear.

**LINEAR OPERATORS.** See: functional analysis (operators).

**LINEAR SPACES.** See: functional analysis; measure and integration; topology.

**LINE GEOMETRY.** See: differential geometry (differential line geometry); geometry (lines).

**LOGIC AND AXIOMATICS.** Cf. Algebra: abstract (lattices); geometry (foundations); intuitionism; lattices; philosophy; probability (foundations); sets (axiomatics).

*Cooley, J. C.	125	*Carnap, R.	209
----------------	-----	-------------	-----

## **Formal and symbolic logic.**

Fitch, F. B.	125	Newman, M. H. A.	126	Curry, H. B.	182
Curry, H. B.	125	Chandrasekharan, K.	126	Alban, M. J.	182
Thompson, S. M.	125	Levi, B.	127	Turing, A. M.	183
Berkeley, E. C.	125	Birkhoff, G. D.	127	Dotterer, R. H.	183
Pankajam, S.	125	Martin, R. M.	182	Quine, W. V.	183
Dexter, G. E.	126	Newman, M. H. A.	182	Post, E. L.	209
Kleene, S. C.	126				

## **Foundations of analysis.**

Martin, R. M.	182	Bernays, P.	183	Blaquier, J.	183
---------------	-----	-------------	-----	--------------	-----

**LOMEL FUNCTIONS.** See: special functions (Bessel functions).

**MAGIC SQUARES.** See: number theory (magic squares).

**MAPS, THEORY OF.** See: differential geometry (special mapping problems).

**MARKOFF CHAINS.** See: probability (Markoff chains).

**MATHIEU FUNCTIONS.** See: special functions (Legendre functions).

**MATRICES.** See: algebra: linear.

**MEASURABILITY PROBLEMS.** See: sets (measurability problems).

**MEASURE AND INTEGRATION.** Cf. Calculus; functional analysis; functions of real variables; sets (measurability problems).

**Classical Riemann-Stieltjes and Lebesgue theory.** Cf. Continued fractions (metric theory).

Radó, T.	5	Linés Escardó, E.	75	Schwartz, H. M.	154
Froda, A.	5	Chelidze, W.	75	Tautz, G.	269
de Mira Fernandes, A.	75	Moran, P. A. P.	153	Helsel, R. G.-Radó, T.	269
Stone, A. H.-		Verčenko, I.	154		
Tukey, J. W.	75				



MEASURE AND INTEGRATION. (Continued)

Denjoy theory and related topics.

Jeffery, R. L.	75	Jeffery, R. L.	
McShane, E. J.	75	Ellis, H. W.	154

Area, lengths. Cf. Calculus of variations (generalized geometrical theory).

Radó, T.		Verčenko, I.	154	Reichelderfer, P. V.	213
Reichelderfer, P.	75	Radó, T.	155	Radó, T.	224, 270

Abstract theory of measure, integration and differentiation.

Hornich, H.	4	Kakutani, S.	154	Pitt, H. R.	219
Rosenthal, A.	5	Rickart, C. E.	162	Wiener, N.	
Olmsted, J. M. H.	11	Alexandroff, A. D.	192	Wintner, A.	220
Maharam, D.	11, 12	Raikov, D.	219	Yosida, K.	247

MECHANICAL QUADRATURES. See: interpolation (mechanical quadratures); numerical methods (differentiation).

MECHANICS. Cf. Ballistics; mechanics of continua; quantum mechanics; statistical mechanics.

\*Keller, E. G. 150

Foundations.

Draper, G. H.	57	Birkhoff, G. D.	115
---------------	----	-----------------	-----

Statics.

Pippard, A. J. S.	46	Shor, J. B.	116	Nudelman, J. L.	116
-------------------	----	-------------	-----	-----------------	-----

Kinematics.

Badell, E.		Shor, J. B.	116	Shor, J. B.	174
Masada, M. A.	57	Jackson, D.	116	Kasner, E.	198
Srinivasengar, C. N.	111	Campbell, J. W.	173		

Dynamics. Cf. Astronomy; relativity; symbolic dynamics.

Wiener, N.		Chandrasekhar, S.	57	Cetajev, N. G.	225
Wintner, A.		Birkhoff, G. D.	116	Malkin, I. G.	225
Kasner, E.	54	Kimball, W. S.	116	Hartman, P.	
Terracini, A.	54	Nagabhusanam, K.	158	Wintner, A.	226
Kasner, E.		Schrödinger, E.	173	Kasner, E.	
DeCicco, J.	54	Kimball, W. S.	225	De Cicco, J.	226

Oscillations. Cf. Differential equations (nonlinear oscillations).

Bögel, K.	42	Lefschetz, S.	142	Bhatnagar, P. L.	
Levinson, N.		Bulgakov, B. V.	142	Kothari, D. S.	233
Smith, O. K.	42	Butenin, N.	143	Rocard, Y.	233
Weinstein, A.	116	Schlapp, R.	173	Bulgakov, B. V.	245
Zadunajsky, P. E.	116	Bödewadt, U. T.	173	Zech, T.	275
Gagut, A. F.	121	Krieger, K.	173	Bulgakov, B. V.	275
*Kryloff, N.		Schade, T.	177	Friedrichs, K. O.	
Bogoliuboff, N.	142			Stoker, J. J.	275

Special problems. Cf. Potential theory (special potentials).

Pipes, L. A.	92	Voznesensky, I. N.	116	Garvey, S. J.	
Seyfarth, H. H. G.	116	Nicolai, E. L.	116	Hetsel, K. W.	284

MECHANICS, NONLINEAR. See: differential equations (nonlinear oscillations).

MECHANICS OF CONTINUA. Cf. Acoustics; ballistics; geophysics.

Hydrodynamics and aerodynamics. Cf. Astronomy (figures of equilibrium); geophysics.

Kravtchenko, J.	58	Loytzensky, L. G.	120	Krienes, K.	
Kolcher, M.	59	Schmidt, H.		Schade, T.	177
von Kármán, T.	59	Schröder, K.	120	Rosenblatt, A.	177
Stewart, H. J.	59	Jaekel, K.	120	Hantzsch, W.	
Mohr, E.	59	Stewart, H. J.	121	Wendt, H.	177
Keulegan, G. H.	59	Vetchinkin, V.	121	Malavard, L.	177
Seth, G. R.		Gagut, A. F.	121	Schlichting, H.	227
Gupta, Q. C.	60	Kravtchenko, J.	175	Kochin, N. E.	
Heiland, E.	60	Wiegand, K.	175	Loytzensky, L. G.	227
Van Miegheem, J.	60	Schwabe, M.	175	Kochin, N. E.	228
Schweiz, M.	60	Roy, M.	175	Theilheimer, F.	228
Rosenblatt, A.	61	Oudart, A.	175	Randels, W. C.	228
Astrov, G. G.	61	Thiriot, K.-H.	175	Simonov, L. A.	228
Hantzsch, W.		Dorodnitsyn, A.	176	Sauer, R.	260
Wendt, H.	118	Loytzensky, L. G.	176	Bers, L.	260
Ballabh, R.	118	Roy, S. K.	176	Unna, P. J. H.	260
Busemann, A.	118	Seth, B. R.	176	Portisky, H.	261
Betz, A.	118	Rocard, Y.-Véron, M.	176	Lia, C. C.	261
Thomas, T. Y.	118	Mohr, E.	177	Ertel, H.	262
Tollmien, W.	119	Heinrich, G.	177		

Turbulence. Cf. Statistical mechanics.

Stockmann, W.	60	Frankl, F.	121	Keulegan, G. H.	
Pekris, C. L.	61	Schmidt, W.	178	Patterson, G. W.	262
Thomas, T. Y.	118	Lia, C. C.	227	Reichardt, H.	262
Millonickov, M.	121	Kalinke, A. A.	229	Dryden, H. L.	263
Obuhov, A.	121	Shveta, M.	262	Synge, J. L.	
				Lia, C. C.	263

MECHANICS OF CONTINUA. (Continued)

Elasticity, plasticity.

Prager, W.	61	Myklestad, N. O.	123	Korenev, B. G.	180
Stanton, H. E.	61	Green, A. E.	123	Drymael, J.	180
Kucharski, W.	61	Müller, E.	123	Kantorovich, L. V.	203
Beckmann, R.	62	Eschler, H.	123	Pearlman, Y. I.	203
Southwell, R. V.	62	Shulezhko, P. G.	123	Ratzerdorfer, J.	229
Pfanz, E.	62	Galerkin, B. G.	124	Weber, C.	230
Higuchi, S.	62	Brachkovsky, B. Z.	124	Dolberg, M.	230
Higuchi, S.	62	Nowoschilow, W. W.	124	Reutter, F.	230
Imuma, K.	62	Pfäfer, A.	124	Reimer, E.	230
Higuchi, S.	63	Miller, H.	124	Fortin, R.	230
Stevenson, A. C.	63	Bull, A.	124	Papkovitch, P. F.	230
Ratzerdorfer, J.	63	Thoma, D.		Levy, S.	230
Hencky, H.	63	Schilhanal, M.	124	Stevenson, A. C.	231
von Kármán, T.		Sokolnikoff, I. S.		Panov, D. J.	231
Tsien, H.-S.	63	Specht, R. D.	144	Parkhomovsky, J.	231
Tsien, H. S.	63	Saibel, E.	178	Kilchevsky, N. A.	231
Goodier, J. N.	64	Epstein, P. S.	178	Stevenson, A. C.	231
Sturm, R. G.	64	Duncan, W. J.	179	Sokolovsky, W.	231
Schubert, G.	64	Dechanelidse, G. J.		Kachanov, L. M.	232
Higgins, T. J.	64	Radzig, M. A.	179	Arnold, L.	232
Pippard, A. J. S.	64	Sadowsky, M. A.	179	Flax, A. H.	232
Hildebrand, F. B.	84	Ghosh, N. N.	179	Bronsky, A. P.	232
Pipes, L. A.	92	Goguel, J.	179	Prager, W.	
Aronszajn, N.		Reinshuber, F.	179	Hay, G. E.	233
Weinstein, A.	101	Platier, C.	180	Sadowsky, M. A.	263
Malkin, I.	121	Lekhnitsky, S. G.	180	Reissner, E.	263
Prescott, J.	121	Dudley, L. P.	180	Grosser, C. E.	264
Pipes, L. A.	122	Strandnager, A. G.	180	Glagolev, N. I.	264
Higgins, T. J.	122	Ruchadze, A. K.	180	Philippov, A. P.	264
Sokolnikoff, I. S.	122	Wolf, K.	180	Schubert, G.	264
Milne-Thomson, L. M.	122	Sokolowsky, W. W.	180	Wolf, K.	264
Prager, W.	123	Kachanov, L. M.	180	Gran Olsson, R.	264
Sen, B.	123	Shervchenko, K. N.	180	Ohlig, R.	264
		Ishinsky, A. J.	180		

Wave propagation and vibrations. Cf. Differential equations (nonlinear oscillations); geophysics (seismic waves).

Bickley, W. G.	45	Wilson, J. T.	101	Dávila, C. R.	178
Tranter, C. J.	45	Beach Erosion Board	118, 119	Saibel, E.	178
Kolcher, M.	59	Bond, H.	119	Epstein, P. S.	178
von Kármán, T.	59	Jacob, C.	119	Duncan, W. J.	179
Seth, G. R.		Ginsburg, V. L.	121	Arnold, L.	232
Gupta, Q. C.	60	Malkin, I.	121	Flax, A. H.	232
Havelock, T. H.	60	Kucharski, W.	121	Reissner, E.	233
Kucharski, W.	61	Prescott, J.	121	Jeffreys, H.	233
Beckmann, R.	62	Oudart, A.	175	Keulegan, G. H.	
Dick, J.	64			Patterson, G. W.	262

Special problems.

Havelock, T. H.	60	Simonov, L. A.	119	Gantmacher, F. R.	
Behrbohm, H.	61	Pipes, L. A.	122	Segal, B. I.	229
Opatowski, I.	64	Polubarinova-Pavlov, A. T.	178	Rosbach, H.	229
Pavlov, A. T.	119	Kochina, P. J.	178	Fortier, A.	229
Braginikaya, V. A.	119	Mokrytski, G. A.	229	Ekzergian, R.	229
Numerov, S. N.	119	Frössel, W.	229	Hoff, N. J.	232
Polubarinova-Kotachina, P. J.	119	Riesenkampf, B. K.		Timoshenko, S. P.	233
Loytzensky, L. G.	119	Kalinin, N. K.	229	Reissner, E.	233

MELLIN TRANSFORMS. See: Fourier integrals (Mellin transforms).

MEROMORPHIC FUNCTIONS. See: functions of complex variables.

METEOROLOGY. See: geophysics.

METRIC GEOMETRY. See: differential geometry; geometry; topology.

METRIC SPACES. See: differential geometry; functional analysis; geometry; topology.

MINIMAL SURFACES. See: calculus of variations (minimal surfaces); differential geometry (minimal surfaces).

MINKOWSKI GEOMETRY. See: geometry (Minkowski).

MODULAR FUNCTIONS. See: elliptic functions (automorphic functions); number theory (analytical tools).

MODULAR GROUPS. See: elliptic functions (modular groups).

MOLECULAR THEORIES. See: quantum mechanics (molecular theories).

MOMENTS, PROBLEM OF. Cf. Completely monotone functions; statistics (frequency functions).

Gaspar, F. L.	196	Heilinger, E. D.	
		Wall, H. S.	244

**MONOGENIC FUNCTIONS.** See: functions of complex variables (quasi-analytic functions).

**NETS.** See: differential geometry; topology (graphs).

**NETWORKS, ELECTRIC.** See: electricity (networks).

**NOMOGRAPHY.** See: numerical methods (nomography).

**NON-EUCLIDEAN GEOMETRY.** See: geometry (non-Euclidean).

**NONLINEAR MECHANICS.** See: differential equations (non-linear oscillations).

**NORMAL FAMILIES.** See: functions of complex variables (normal families).

**NUCLEAR PHYSICS.** See: quantum mechanics (elementary particles).

**NUMBER THEORY.** Cf. Continued fractions (number-theoretical applications); Diophantine approximations; tables (number-theoretical).

#### Elementary theory of numbers.

Bose, R. C.	33	Sanguinetti, J.	252	Kantz, G.	265
Gupta, H.	33	Baur, F.	265	Picken, F. A.	265

#### Magic squares.

Fisher, R. A.	27	Turnbull, H. W.	68	Fisher, R. A.	183, 184
Bose, R. C.	33	Kerwala, S. M.	69	Mann, H. B.	184
Nair, K. R.	33	Fisher, R. A.	127	Heath, R. V.	210
Bose, R. C.	33	Bose, R. C.	128	Bose, R. C.	237
Levi, F. W.	49				

#### Congruences.

Vandiver, H. S.	34	Hua, L.	130	Pillai, S. S.	210
Carlitz, L.	35	Kanava Menou, P.	188	Banerji, D. P.	265

#### Diophantine equations and representation problems.

Gupta, H.	33	Aucoin, A.	130	Bell, E. T.	240
Patterson, J. O.	33	Hua, L.	130	Niven, I.	240
Bell, E. T.	34	Gage, W. H.	188	Pall, G.	240
Niven, I.	34	Mordell, L. J.	189	Mordell, L. J.	265
Mahler, K.	34	Linnik, U. V.	211	Richmond, H. W.	265
Pall, G.	34				

#### Geometry of numbers.

Heinhold, J.	36	Bullig, G.	133		
Mordell, L. J.	131	Estermann, T.	189		

#### Divisibility and factorization problems.

Bose, R. C.	33	Lehmer, D. H.	188	Zuckerman, H. S.	210
Gunderson, N. G.	188	Pillai, S. S.	210		

#### Power residues and laws of reciprocity.

Linnik, U. V.	189				
---------------	-----	--	--	--	--

#### Algebraic number theory, number fields.

Niven, I.	34	MacLane, S.		Niven, I.	240
Carlitz, L.	35	Schilling, O. F. G.	187	Molsen, K.	266
Hua, L.	130	Bell, E. T.	240	Bédet, L.	266
Carlitz, L.	131				

#### Class fields and class numbers.

Whaples, G.	72	Hua, L.	130	Hasse, H.	239
-------------	----	---------	-----	-----------	-----

**Theory of forms.** Cf. Elliptic functions (automorphic functions; modular groups).

Mahler, K.	34	Linnik, U. V.	211	Pall, G.	240
Mordell, L. J.	131, 189	Davenport, H.	212	Tchudakoff, N.	240
Estermann, T.	189	Bennet, G.	240	Siegel, C. L.	242
Pall, G.	189				

#### Additive theory of numbers.

Gupta, H.	33	Salem, R.		Anluck, F. C.-Chowla.	
Patterson, J. O.	33	Spencer, D. C.	131	S.-Gupta, H.	211
Pall, G.	34	Linnik, U. V.	131	Anluck, F. C.	211
Carlitz, L.	35	Walfisz, A.	132	Sisánov, S.	211
James, R. D.	35	Buchstab, A.	190	Artin, E.-Scherk, P.	212
Weyl, H.	35	Gupta, H.	190	Stör, A.	241
Mann, H. B.	35	Salem, R.-Spencer,		Linnik, U. V.	241
Erdős, P.	36	D. C.	190	Gupta, H.	241
		Gupta, H.	211	James, R. D.	265

#### Waring problem.

Walfisz, A.	132	Linnik, U. V.	211		
-------------	-----	---------------	-----	--	--

### NUMBER THEORY. (Continued)

#### Number-theoretical functions.

Erdős, P.	16	Mayer, A. E.	194	Anluck, F. C.-Chowla.	
Hua, L.	130	Pillai, S. S.	210	S.-Gupta, H.	211
Shapiro, H.	188	Zuckerman, H. S.	210	Pillai, S. S.	240
Gunderson, N. G.	188	Gupta, H.	211	Banerji, D. P.	265
Lehmer, D. H.	188	Anluck, F. C.	211		

**Theory of primes: distribution of primes.** Cf. Dirichlet series (zeta functions).

Vandiver, H. S.	34	Titchmarsh, E. C.	131	Linnik, U. V.	211
James, R. D.	35	Linnik, U. V.	189	Sambasiva Rao, K.	
Weyl, H.	35	Behrend, F. A.	189	Nagabhushanam,	
Behrend, F. A.	35	Sisánov, S.	211	K.	240
Wintner, A.	35	Vinogradov, I. M.	211	Titchmarsh, E. C.	265
Carlitz, L.	131				

**Analytic theory of numbers in number fields and fields of functions.** Cf. Elliptic functions.

Carlitz, L.	35	Siegel, C. L.	189	Linnik, U. V.	211
Guinand, A. P.	98	Vinogradov, I. M.	211	Titchmarsh, E. C.	265
Titchmarsh, E. C.	131				

#### Lattice points.

Tietze, H.	36	Spencer, D. C.	190	Mahler, K.	212
Walfisz, A.	132	Hua, L.	190	Pillai, S. S.	266
Bullig, G.	133	Deisarte, J.	191		

**Analytical tools.** Cf. Diophantine approximations (equidistribution problems); Dirichlet series; elliptic functions.

Siegel, C. L.	189	Vinogradov, I. M.	211	Linnik, U. V.	211
---------------	-----	-------------------	-----	---------------	-----

### NUMERICAL AND GRAPHICAL METHODS. Cf. Tables.

**Equations.** Cf. Actuarial mathematics (mathematics of finance).

Krafft, M.	90	Running, T. R.	202	Carnock, A. F.	
Higgins, T. J.	90	Truell, R.	274	Hughes, J. M.	282
Brown, S. L.	91	Hall, N. A.	282	Levi, B.	282
Wheeler, L. L.	91	Spoerl, C. A.	282	Brown, S. L.	
				Wheeler, L. L.	284

#### Systems of linear equations, determinants.

Morris, J.	90	Salbel, E.	148	Dwyer, P. S.	164
Lonseth, A. T.	90	Samuelson, P. A.	148	Hotelling, H.	202
Banachiewicz, T.	90	Morris, J.-Head, J. W.	148		

**Differences, interpolation and graduation.** Cf. Differences; errors; interpolation.

Sinai, J. B.	20	Thompson, A. J.	202	Feller, W.	283
Tables	89	Neuschuler, L.	202	Berjman, E.	283
Lowan, A. N.-		Samuelson, P. A.	279	Walther, A.	
David, N.		Nair, K. R.		Brinkmann, K.	283
Levenson, A.	90	Shrivastava, M. P.	279	Bödewadt, U. T.	283
Spoerl, C. A.	91	Boyer, J.	253	Masera, J. L.	283
Mikoladze, S.	91				

#### Special constants.

Bickley, W. G.	202				
----------------	-----	--	--	--	--

**Computation of series.** Cf. Differences (summation formulas); series.

Lowan, A. N.-Blanch,		Bertram, S.	91		
G.-Horenstein, W.	90	Bickley, W. G.	202		

#### Differentiation and integration.

Pearson, E. S.	19	Coulson, C. A.		Segal, B. I.	148
Hartley, H. O.	19	Duncanson, W. E.	90	Thomas, M.	148
Pollard, W. G.	74	Lowan, A. N.-Salsar,		Vernotte, P.	148
		H. E.-Hillman, A.	148		

#### Differential and integral equations.

Grünberg, G. A.		Pugachev, V. S.	149	Ratzerdorfer, J.	229
Kontorovitch,		Waschakidze, D.	149	Papkovitch, P. F.	230
M. I.-Lebedev,		Aprile, G.	149	Parkhomovsky, J.	231
N. N.	32	Dorodnitsyn, A.	176	Masera, J. L.	283
Collatz, L.	83	Courant, R.	200	Collatz, L.	283
Lapouri, I. D.	91	Behrohm, H.	203	Kappus, R.	283
Pfrien, H.	91	Magnusson, P. C.	203	Stange, K.	283
Malkin, I.	121	Kantorovitch, L. V.	203	Kornes, M.	284
von Sanden, H.	149	Pearlman, Y. I.	203	Brown, S. L.	
Collatz, L.		Frösel, W.	229	Wheeler, L. L.	284
Zurmühl, R.	149				

**Practical harmonic analysis.** Cf. Statistics (time series).

Schumann, T. E. W.	27	Macewan, D.		Savar, S. R.	108
Patterson, A. L.		Boevers, C. A.	91	Born, W. T.	
Tunell, G.	91	Evans, R. C.-Peters,		Kendall, J. M.	203
		H. S.	91	Härtel, W.	284

**NUMERICAL AND GRAPHICAL METHODS.** (Continued)

**Instruments.**

Macewan, D.	Kaudern, L. F.	92	Sauer, R.-Pösch, H.	284
Bevers, C. A.	Katterbach, K.	92	Victoria, L.	284
Evans, R. C.	Sutton, R. M.	166	Kormes, M.	284
Feiser, H. S.	Born, W. T.		Härtel, W.	284
Brown, S. L.	Kendall, J. M.	203	Obiaski, J.	284
Wheeler, L. L.	Siebert, A. J. F.	203	Rauh, K.	284

**Nomography.**

Gabriel, F.	103	Kappus, R.	283	Meincke, H.	284
Seyfarth, H. H. G.	116	Hansel, C. W.	284	Schminke, H.	284
*Davis, D. S.	147	Silver, R. S.-Weir,		Babini, J.	284
Mokrzycki, G. A.	150	G.-Weir, J.	284	Elkins, T. A.	284

**OPERATIONAL CALCULUS.** Cf. Differential equations (applications of integral transforms).

Banerjee, D. P.	81	Millman, J.	94	Gardner, M. F.	
Humbert, P.	81	Coulthard, W. B.		Barnes, J. L.	150
Weber, E.	93	Aprile, G.	149	Curry, H. B.	245
				Piaggio, H. T. H.	275

**OPERATORS.** See: differential equations (differential operators); functional analysis.

**OPTICS**

Schrödinger, E.	31	Ambarzumian, V. A.	92	Lifshitz, I. M.	236
Silberstein, L.	32	Ramachandran, G. N.	151	Wendt, G.	286
Glaser, W.	32	Kuznetsov, E. S.	161	Duntley, S. Q.	286
Dosse, J.	32	Rose, M. E.	199	Sivukhin, D. V.	286
Silberstein, L.	92	Silberstein, L.	203	Schrieffer, O.	286
Spencer, D. E.	92	Glaser, W.	204	Picht, J.-Hilman, J.	289
Frank, P.	92	Gutton, H.-Ortusi, A.	233		

**Geometrical optics.** Cf. Differential geometry (differential line geometry).

Hersberger, M.	204	Synge, J. L.	204	Korff, G.	284
----------------	-----	--------------	-----	-----------	-----

**ORBITS.** See: astronomy (orbits).

**ORTHOGONAL FUNCTIONS AND EXPANSIONS.** See: approximation (orthogonal functions); differential equations (boundary value problems); Fourier integrals; Fourier series; polynomials (polynomial approximations); special functions.

**OSCILLATION AND COMPARISON THEOREMS.** See: differential equations (ordinary linear).

**OSCILLATIONS.** See: differential equations; electricity; mechanics (oscillations); mechanics of continua (wave propagation); numerical methods (differential equations; practical harmonic analysis).

**p-ADIC THEORY.** See: algebra: abstract (p-adic theory); number theory.

**PARABOLIC DIFFERENTIAL EQUATIONS.** See: differential equations; diffusion; functional analysis (existence theorems); heat conduction; numerical methods (differential equations).

**PARATINGENT.** See: differential geometry (set-theoretical methods); functions of real variables (differentiation).

**PARTITIONS.** See: combinatorial analysis; number theory (elementary; additive; number-theoretical functions).

**PERTURBATIONS.** See: astronomy; differential equations.

**PFAFF PROBLEM.** See: differential equations (total equations).

**PHILOSOPHY OF MATHEMATICS AND PHYSICS.** Cf. Intuitionism; logic.

Levi, B.	127	Black, M.	127	*Carnap, R.	209
Greenwood, T.	127	Birkhoff, G. D.	127	Greenwood, T.	210

**PICARD THEOREM.** See: functions of complex variables (Picard theorem).

**PLATEAU PROBLEM.** See: calculus of variations (minimal surfaces); differential geometry (minimal surfaces).

**POINT SETS.** See: convex bodies; differential geometry (set-theoretical methods); functional analysis; functions of real variables (differentiation); measure and integration; potential theory (capacity constants); sets; topology.

**POLITICAL ARITHMETIC.** See: actuarial mathematics (mathematics of finance).

**POLYHEDRA.** See: geometry; topology.

**POLYNOMIALS.** Cf. Algebra: equations; Fourier series (trigonometric polynomials); interpolation.

**Zeros.** Cf. Functions of complex variables (zeros); numerical methods (equations).

Komami, D. D.	39	Albert, A. A.	195	Kaener, H.	273
Weimer, L.	40	Tachebotarow, N.	195	Seitz, O.	273
Lahaye, E.	41	Marden, M.	196	Kac, M.	196
Lipka, S.	41	Gaspar, F. L.	196	Maximoff, I.	273
Tachebotarow, N.	67	Vijayaraghavan, T.	196	Dickinson, D. R.	273

**Irreducibility, representation problems.**

Perlin, I. E.	41	Lubeiski, S.	67
---------------	----	--------------	----

**Extremal problems.** Cf. Functions of complex variables (extremal problems); inequalities (extremal problems).

Erdős, P.-Szegő, G.	41	Jackson, D.	41
---------------------	----	-------------	----

**Special polynomials, orthogonal polynomials.** Cf. Special functions.

Schmidl, S.	39	Lowan, A. N.-Davida,		Szegő, G.	244
Jackson, D.	41	N.-Levenson, A.	90	Seitz, O.	273
Feldheim, E.	41	Hille, E.	97	Dickinson, D. R.	273
Babini, J.	41	Erdős, A.	140	Erdős, P.	273
Shohat, J.	41	Gaspar, F. L.	196	Schmeidler, W.	273
Fort, T.	79	Shabde, N. G.	197	Garna, E. G.	278
Bateman, H.	83	Oberg, E. N.	218		

**Polynomial approximations and expansions.** Cf. Approximation; functions of complex variables (polynomial expansions; complex interpolation).

Schmidl, S.	39	Schiffer, M.	78	Clarkson, J. A.	
Shohat, J.	41	*Sewell, W. E.	78	Erdős, P.	196
Dinsdale, B.	41	Tachebotarow, N.	195	Laden, H. N.	196
				Boas, R. P., Jr.	271

**POTENTIAL THEORY.** Cf. Differential equations; harmonic functions.

**General theory.**

Soudan, R.	44	Zamorev, A.	102	Macintyre, A. J.	
Wayre, R.	44	*Snow, C.	197	Wilson, R.	216

**POWER RESIDUES.** See: number theory.

**POWER SERIES.** See: functions of complex variables; series (power series).

**PRIME NUMBERS.** See: number theory.

**PROBABILITY THEORY.** Cf. Actuarial mathematics; biological problems; statistical mechanics; statistics.

*Holmes, M. C.	102
----------------	-----

**Foundations.** Cf. Logic; philosophy.

Göing, E.	15	Ferrari, E.	16
Kemble, E. C.	16	Jeffreys, H.	103

**Elementary theory.** Cf. Combinatorial analysis.

Geiringer, H.	16	Battin, I. L.	102	Nair, A. N. K.	248
Chung, K.-L.	102	Chung, K. L.	248	Borel, E.	248

**Geometric probabilities.**

Radhakrishna Rao, C.	248
----------------------	-----

**Distribution functions.** Cf. Fourier integrals (Fourier-Stieltjes integrals); moments.

Leiser, C. E. V.	16	Gnedenko, B.	102	Kac, M.	194
Curtis, J. H.	16	Kenney, J. F.	103	Bhattacharyya, B. C.	248
Lukacs, E.	16	Curtis, J. H.	163	Kaplanky, I.	279
Hartman, P.		Satterthwaite, F. E.	163		
Wintner, A.	18				

**Limit theorems.**

Rosenblatt, A.	16	Erdős, P.	16	Banerjee, D. P.	104
Dieulefait, C. E.	16	Gontcharoff, W.	102	Curtis, J. H.	248
Kozakiewicz, W.	16	Gnedenko, B.	102, 103		



**PROBABILITY THEORY.** (Continued)

**Markoff chains and stochastic processes.** Cf. Ergodic theory.

Opatowski, L.	17	Doob, J. L.	103	Wiener, N.	
Blackwell, D.	17	Bouchman, E. N.	103	Wintner, A.	220
Doob, J. L.	17	Satterthwaite, F. E.	163	Feather, N.	223
Hartman, P.		Koyenuma, N.	201	Lin, C. C.	227
Wintner, A.	18	Rice, S. O.	205	Borel, E.	248
Gnedenko, B.	103	Pitt, H. R.	219	Chandrasekhar, S.	248
				Griffith, L.	249

**Random functions in analysis.** Cf. Continued fractions (metric theory).

Kosambi, D. D.	39	Kac, M.	196
----------------	----	---------	-----

**PRODUCTS, INFINITE.** See: series (infinite products).

**PROJECTIVE DIFFERENTIAL GEOMETRY.** See: differential geometry (conformal).

**PROJECTIVE GEOMETRY.** See: geometry (projective).

**PROOFS, THEORY OF.** See: logic (formal).

**QUADRATURE FORMULAS.** See: interpolation (mechanical quadratures); numerical methods (differentiation).

**QUADRICS.** See: geometry (elementary).

**QUANTUM MECHANICS.**

March, A.	234	*Margenau, H.	
		Murphy, G. M.	268

**General theory and relativistic quantum mechanics.**

Madhava Rao, B. S.	31	Titchmarsh, E. C.	100	Martin, D.	207
Knie, G.	31	Jeffreys, H.	103	Beck, G. M.	286
Lanczos, C.	56	Infeld, L.	144	Gora, E.	290
Stueckelberg, E. C. G.	56	Sen, N. R.	144	Heisenberg, W.	292
March, A.	96				

**Elementary particles, nuclear physics.** Cf. Geophysics (cosmic rays).

Iyengar, K. S. K.	30	Schrödinger, E.	173	Bhabha, H. J.	
Picherie, L.	30	de Beaugrand, O. C.	174	Chakrabarty, S. K.	236
Galunin, A. D.	94	Jaeger, J. C.	207	Chakrabarty, S. K.	236
Ma, S. T.-Yu, F. C.	95	Petiau, G.	207	Proca, A.	236
Pauli, W.-Dancoff, S. M.	95	Soonawala, M. F.	207	Ginsburg, V. L.	236
Galunin, A. D.	95	Serber, R.	207	Tables	282
Madhava Rao, B. S.	95	Dancoff, S. M.	207	Milne, E. A.	285
Heitler, W.	95	Schrödinger, E.	207	MacColl, L. A.	286
Wilson, A. H.	95	Haenzel, G.	226	Haenzel, G.	290
Sokolow, A.	95	Heitler, W.	235	Bhabha, H. J.	
March, A.	96	Jauch, J. M.	235	Chakrabarty, S. K.	291
Wheeler, T. S.	96	Ives, H. E.	235	Schumann, W. O.	291
Tonnelet, M.-A.	152	Smorodinskij, J.	235	Höcker, K. H.	291
		Langevin, P.	236	Nikolsky, K.	291
				Heisenberg, W.	292

**Molecular theories.**

Balandin, A. A.	292
-----------------	-----

**Solids.** Cf. Potential theory (lattice potentials).

Somens, V.	30	Born, M.		Srividya, D. V.	286
Lifshitz, E. M.	206	Bradburn, M.	206	v. Lane, M.	290
Born, M.		Born, M.	206	Laval, J.	290
Ledermann, W.	206	Bradburn, M.	207	Bond, W. L.	290
		Lifshitz, I. M.	236	Lifshitz, E. M.	291

**QUASI-ANALYTIC FUNCTIONS.** See: functions of complex variables (quasi-analytic functions).

**QUASI-GROUPS.** See: groups (generalized groups).

**QUATERNIONS.** See: algebra: abstract; algebra: linear (hypercomplex systems); functions of complex variables (functions of quaternion variables); vector calculus.

**RANDOM FUNCTIONS.** See: probability; statistics.

**REAL FUNCTIONS.** See: functions of real variables.

**REGULAR FIGURES.** See: geometry (regular figures).

**RELATIVITY.** Cf. Astronomy (cosmology); quantum mechanics (general theory).

Knie, G.	31	Cattermole, J.	151	Dive, P.	226
*Bergmann, P. G.	55	Walker, A. G.	171	Milne, E. A.	226, 227
Einstein, A.	55	McVittie, G. C.	174	March, A.	234
Band, W.	55, 56	de Beaugrand, O. C.	174	Birkhoff, G. D.	285
Racine, C.	56	Martin, D.	207	Milne, E. A.	285, 286
Lanczos, C.	56	Coxeter, H. S. M.	226	Whitrow, G. J.	286
Stueckelberg, E. C. G.	56	Einstein, A.	226	MacColl, L. A.	286
Birkhoff, G. D.	116	Pauli, W.	226	Wüchschmidt, J.	286
Houston, R. A.	117	Lichnerowicz, A.	226	Beck, G.	286
Berenda, C. W.	117				

**REPRESENTATION THEORY.** See: algebra: abstract; algebra: linear; groups.

**RICCI CALCULUS.** See: differential geometry; vector calculus (tensors).

**RIEMANNIAN GEOMETRY.** See: differential geometry.

**RIEMANN SURFACES.** See: functions of complex variables (Riemann surfaces); topology (covering surfaces).

**RINGS.** See: algebra: abstract (rings); functional analysis (operators).

**ROTATING FLUID BODIES.** See: astronomy (figures of equilibrium).

**SAMPLING THEORY.** See: statistics (sampling theory).

**SCHLICHT FUNCTIONS.** See: functions of complex variables.

**SCHWARZ LEMMA.** See: functions of complex variables.

**SEISMOLOGY.** See: geophysics (seismology).

**SELF-RECIPROCAL FUNCTIONS.** See: Fourier integrals (self-reciprocal functions).

**SEMI-GROUPS.** See: groups (generalized groups).

**SERIES.** Cf. Almost periodic functions; approximation; continued fractions; differences; Dirichlet series; Fourier series; functions of complex variables (polynomial expansions); interpolation; numerical methods (computation of series); polynomials (polynomial approximations); probability theory (random functions in analysis); Tauberian theorems.

\*Hyslop, J. M. 193

**Special sequences and series.** Cf. Number theory (number-theoretical functions); special functions (functions defined by special expansions).

Gupta, H.	33	Carlitz, L.	131	Barnhart, C. A.	194
Vandiver, H. S.	34	Lehmer, D. H.	188	Mayer, A. E.	194
Carlitz, L.	35	Silberstein, L.	194	Kac, M.	194
Agnew, R. P.	81				

**Power and factorial series.** Cf. Functions of complex variables (power series).

Bleick, W. E.	79	Wagner, R. W.	239	Loe, C. T.	244
---------------	----	---------------	-----	------------	-----

**Operations on series.**

Schmidt, S.	39	Walsh, C. E.	194	Bickley, W. G.	
Edmonds, S. M.	79			Miller, J. C.	194

**Convergence and summability.**

Zygmund, A.	76	Forsthe, G. E.		Agnew, R. P.	81
Walsh, C. E.	79	Schaeffer, A. C.	80	Walsh, C. E.	194
Hildebrandt, T. H.	79	San Juan, R.	80	Bosanquet, L. S.	194
Fuchs, W. H. J.	79	Garabedian, H. L.	80	Iyengar, K. S. K.	194
Cesco, R. P.	80	Greenberg, H. J.		Rogosinski, W. W.	195
		Wall, H. S.	80		

**Divergent and asymptotic series.**

Fort, T.	79	Cesco, R. P.	80
----------	----	--------------	----

**SETS, THEORY OF.** Cf. Functional analysis; functions of real variables; measure and integration; topology.

**Axiomatics.** Cf. Logic.

Newman, M. H. A.	126	Bernays, P.	183
Martin, R. M.	182	Blauquier, J.	183

**Abstract theory.** Cf. Lattices.

Duthie, W. D.	74	Cuesta Dutari, N.	212	Erdős, P.-Tarski, A.	269
Birkhoff, G.	74	Carathéodory, C.	269	Rado, R.	269
Otchan, G.	153				

**Point sets.** Cf. Differential geometry (set-theoretical methods); potential theory (capacity constants).

Hornich, H.	4	Albuquerque, J.	75	Ellenberg, S.	
Debnat, J.	4	Stone, A. H.		Harrold, O. G., Jr.	172
Otchan, G.	4	Tukey, J. W.	75	Reichelderfer, P. V.	213
Jones, F. B.	4	Moore, R. L.	146	Smiley, M. F.	
Sandera, S. T., Jr.	74	Otchan, G.	153	Transue, W. R.	248
				Smiley, M. F.	248



SETS, THEORY OF. (Continued)

Measurability problems.

Jones, F. B. 4

Transfinite numbers and problem of continuum.

Birkhoff, G. 74 Cuesta Dutari, N. 212 Phillips, R. S. 218  
Albuquerque, J. 75 Maximoff, I. 213 Erdős, P.-Tarski, A. 269  
Othman, G. 153

SOLIDS. See: potential theory (lattice potentials); quantum mechanics (solids).

SPECIAL FUNCTIONS. Cf. Polynomials (special); tables (special functions).

\*Margenau, H.-  
Murphy, G. M. 268

\*Jahnke, E.-Emde, F. 281

Integral-logarithm and analogous functions.

Tables 89 Coulson, C. A.-  
Duncanson, W. E. 90

Bessel and cylindric functions.

Varma, R. S. 40 Mohan, B. 141 Brauer, P.-Brauer, E. 274  
Humbert, P. 81 Jaeger, J. C.-  
Straubel, R. 274  
Shanker, H. 81 Clarke, M. 148  
Spence, R. D.-  
Giraud, G. 197  
Wells, C. P. 93 Bickley, W. G. 202  
Hille, E. 97 Hille, E.-Seegö, G. 274  
Rao, D. V. B. 98 Truell, R. 274  
Sinha, S. 141 Lowan, A. N.-  
Abramowitz, M. 283

Legendre functions, spherical harmonics, Lamé functions and related topics.

Banerjee, D. P. 81 Stepanoff, W. 245 Stratton, J. A.-Morse,  
Sharma, J. L. 82 Jackson, D. 274 P. M.-Chu, L. J.-  
Erdélyi, A. 82, 140 MacRobert, T. M. 274 Hutner, R. A. 281  
\*Snow, C. 197

Hypergeometric functions.

Mohan, B. 40 Jackson, F. H. 141 Burchall, J. L. 197  
Varma, R. S. 82 Mitra, S. C. 141 Lowan, A. N.-  
Darm, J. A. 82 Sinha, S. 141 Horenstein, W. 197  
Mohan, B. 82 Mohan, B. 141 Gran Olsson, R. 264  
MacRobert, T. M. 83 \*Snow, C. 197 MacRobert, T. M. 274  
Bateman, H. 83 Giraud, G. 197 Dhar, S. C. 275  
Erdélyi, A. 140 Chaudry, T. W. 197 Meixner, J. 275

Functions defined by differential and functional equations.

Cf. Differences (generalized difference equations); functional equations.

Banerjee, D. P. 40 Giraud, G. 197 Stratton, J. A.-Morse,  
Silberstein, L. 81 Scheffé, H. 275 P. M.-Chu, L. J.-  
Hutner, R. A. 281

SPECTRAL THEORY. See: functional analysis (existence theorems).

SPHERES AND CIRCLES, GEOMETRY OF. See: differential geometry (Laguerre geometry); geometry (lines).

SPHERICAL HARMONICS. See: special functions (Legendre functions).

SPHERICAL TRIGONOMETRY. See: trigonometry.

SPINORS. See: quantum mechanics; vector calculus.

STABILITY OF SOLUTIONS OF DIFFERENTIAL EQUATIONS. See: differential equations (ordinary).

STATICS. See: mechanics (statics).

STATISTICAL MECHANICS. Cf. Diffusion; ergodic theory; mechanics of continua (turbulence); thermodynamics.

Doob, J. L. 17 Benham, W. E. 96 Vladimirov, V. 208  
Schumann, T. E. W. 27 Millionnikov, M. 121 Jaffé, G. 208  
Scheffers, H. 29 Obuhov, A. 121 Wiener, N.-  
Kohler, M. 29 Nordieck, A.-Lamb, Wintner, A. 220  
Fuchs, K. 29, 30 W. E., Jr.-  
Chapman, S.-Majid Uhlenbeck, G. E. 152 Lin, C. C. 227  
Mian, A. 30 Scott, W. T.-  
Chandrasekhar, S. 57 Uhlenbeck, G. E. 152 Reichardt, H. 262  
Pekris, C. L. 61 Darrow, K. K. 208 Dryden, H. L. 263  
Mayer, J. E. 96 Khintchine, A. 208 \*Margenau, H.-  
Murphy, G. M. 268

STATISTICS. Cf. Economics (index numbers); probability; tables (statistical tables).

\*Wolfenden, H. H. 18 \*Holzinger, K. J.-  
Harman, H. H. 18 Menger, K. 163  
Wald, A. 220

Frequency functions, moments, graduation. Cf. Errors.

Moyal, J. E. 19 Stephan, F. F. 24 Siegel, I. H. 220  
Burr, I. W. 19 Aitken, A. C.-  
Haavelmo, T. 220  
Kärstén, A. 19 Silverstone, H. 25 Davies, G. R.-  
Raiford, T. E. 20 Haldane, J. B. S. 26 Bruner, N. 221  
Simaka, J. B. 20 Fisher, R. A. 26 Jones, H. L. 221  
Haldane, J. B. S. 20 Kenney, J. F. 103 Pierce, J. A. 221  
Rajalakshman, D. V. 21 Gabriel, F. 103 Kaplansky, I. 279  
Hartley, H. O. 21 Evans, W. D. 103 Shannon, S. 279  
Geary, R. C. 21 Curtiss, J. H. 163 Samuelson, P. A. 279  
von Neumann, J. 21, 22 Satterthwaite, F. E. 163 Nair, K. R.-  
Dwyer, P. S. 24 Hart, B. I. 165 Shrivastava, M. P. 279

Correlation and regression theory.

Geary, R. C. 21 Glock, W. S. 27 Nair, A. N. K. 164  
Anderson, R. L. 22 Banerjee, D. P. 104 Nair, U. S. 164  
Kendall, M. G. 22 Gebelin, H. 104 Guilford, J. P.-  
Koopmans, T. 22 Smith, B. B. 105 Lyons, T. C. 165  
Fischer, C. H. 23 Wilson, E. B.-  
Scheffé, H. 23 Worcester, J. 105, 106 \*Treloar, A. E. 220  
Wilson, E. B. 26 Dwyer, P. S. 164 Haavelmo, T. 220  
Fisher, R. A. 26 Wei, D. 164 Baker, G. A. 221  
Bonnier, G. 26 Gebelin, H. 279

Sampling theory, statistical tests and related topics.

Hartley, H. O. 21 Lévy, P. 103 Scheffé, H. 164  
von Neumann, J. 21, 22 Kendall, M. G. 104 Hart, B. I. 165  
Anderson, R. L. 22 Day, B. B.-  
Guilford, J. P.-  
Wilson, E. B.-  
Sandomire, M. M. 104 Lyons, T. C. 165  
Worcester, J. 23 Satterthwaite, F. E. 104 Nair, K. R. 165  
Paulson, E. 23 Mann, H. B.-Wald, A. 105 Chandra Sekar, C.-  
Beall, G. 23 Bhattacharyya, D. P.-  
Francis, M. G. 165  
Satterthwaite, F. E. 24 Narayan, R. D. 105 Geary, R. C. 165  
Cochran, W. G. 24 Roy, S. N.-Bose, R. C. 105 Wilks, S. S. 165  
Dieulefait, C. E. 24 Smith, B. B. 105 Wald, A. 220  
Dwyer, P. S. 24 Wilson, E. B.-  
Worcester, J. 105, 106 \*Treloar, A. E. 221  
Stephan, F. F. 24 Worcester, J. 105, 106 Kolmogoroff, A. 221  
Anderson, P. H. 24 Geiringer, H. 106 Aroian, L. A. 221  
Hazel, A. A. 24 Irwin, J. O. 106 Scheffé, H. 221  
Daniels, H. E. 24 Roy, S. N. 106 Wallis, W. A. 222  
Camp, B. H. 24 Kendall, M. G. 107 Nair, U. S. 222  
Craig, C. C. 25 Kosambi, D. D. 107 Wald, A. 223  
\*Wald, A. 25 Jeffreys, H. 107 Lawley, D. N. 223  
Wald, A. 25 Scheffé, H. 107 Swed, F. S.-  
Kolmogoroff, A. 25 Wolfowitz, J. 107 Eisenhart, C. 223  
Pearson, E. S. 26 Dodd, E. L. 108 Gumbel, E. J. 280  
Gumbel, E. J. 26 Savur, S. R. 108 Hoel, P. G. 280  
Tiao, F. 26 Nair, K. R. 108 Cochran, W. G. 280  
Haldane, J. B. S. 26 Vall, M. A. 164 Craig, A. T. 280  
Fisher, R. A. 26 Nair, A. N. K. 164 Paulson, E. 280  
Wilson, E. B. 26 Nair, U. S. 164 Moore, G. H.-  
Bonnier, G. 26 de Varennes e Wallis, W. A. 281  
Wilson, E. B. 26 Mendonça, P. 164  
v. Mises, R. 27

Special distributions.

Birnbaum, Z. W. 19 Bhattacharyya, B. C. 23 Vali, M. A. 164  
Pearson, E. S. 19 Shrivastava, M. P. 23 Nair, A. N. K. 164  
Hartley, H. O. 19 Craig, C. C. 23 Hart, B. I. 165  
Lidstone, G. J. 37 Lévy, P. 103 \*Treloar, A. E. 220  
Finney, D. J. 20 Bose, R. C. 103 Aroian, L. A. 221  
Haldane, J. B. S. 20 Kibbale, W. F. 103 Scheffé, H. 221  
Rajalakshman, D. V. 21 Kendall, M. G. 104 Peiser, A. M. 222  
Hartley, H. O. 21 Satterthwaite, F. E. 104 Nair, U. S. 222  
Girshick, M. A. 21 Bhattacharyya, B. C. 248 Bhattacharyya, B. C. 248  
von Neumann, J. 21, 22 Narayan, R. D. 105 Samuelson, P. A. 279  
Hart, B. I. 22 Irwin, J. O. 106 Schneider, O. 279  
Koopmans, T. 22 Roy, S. N. 106 Hoel, P. G. 280  
Paulson, E. 23 Girshick, M. A. 164 Cochran, W. G. 280  
Merrington, M. 23

Random experiments and related topics. Cf. Combinatorial analysis.

Beall, G. 23 Nair, K. R. 108 Nair, K. R. 223  
Satterthwaite, F. E. 24 Kishen, K. 108 Gage, R. 223  
Daniels, H. E. 24 Fisher, R. A. 127 Swed, F. S.-  
Craig, C. C. 25 Bose, R. C. 128 Eisenhart, C. 223  
Fisher, R. A. 27 de Varennes e Bose, R. C. 227  
Bose, R. C.-  
Mendonça, P. 164 Kishen, K. 281  
Nair, K. R. 33 Fisher, R. A. 183, 184 Ramamurti, B.-  
Bose, R. C. 33 Mann, H. B. 184 Sitaraman, B. 281  
Levi, F. W. 49 Bose, R. C.-  
Bhattacharyya, A. 281  
Kerakawa, S. M. 69 Kishen, K. 222 Nair, K. R. 281  
Dodd, E. L. 108

Biometrics, demography. Cf. Actuarial mathematics (analysis of mortality); biological problems.

Wright, S. 27 Lotka, A. J. 28

Time series. Cf. Numerical methods (practical harmonic analysis).

Glock, W. S. 27 Kimball, B. F. 29 Moore, G. H.-  
Schumann, T. E. W. 27 Savur, S. R. 108 Wallis, W. A. 281  
Gumbel, E. J. 29 Feather, N. 223

**STATISTICS.** (Continued)

**Applications.** Cf. Actuarial mathematics; astronomy (cosmology); biological problems; economics.

Campbell, N. R.	28	Kosambi, D. D.	109	Koyenuma, N.	201
Rosenblatt, A.	28	Kimball, B. F.	109	Rice, S. O.	205
Chambers, E. G.		Wilks, S. S.	165	Feather, N.	223
Yule, G. U.	28	Wald, A.	165	Chandrasekhar, S.	
Gumbel, E. J.	29	Gumbel, E. J.	166	von Neuman, J.	227
Kimball, B. F.	29	Haldane, J. B. S.	166	Jerning, J.	281
Bouchman, E. N.	103	Pitts, W.	201	Greville, T. N. E.	281
Sukhatme, P. V.	108				

**STELLAR STATISTICS.** See: astronomy (cosmology).

**STELLAR STRUCTURE.** See: astronomy.

**STOCHASTIC PROCESSES.** See: probability (Markoff chains).

**SUBHARMONIC FUNCTIONS.** See: harmonic functions (subharmonic functions); potential theory.

**SUMMABILITY.** See: Fourier integrals (summability); Fourier series (convergence); series (convergence); Tauberian theorems.

**SUMMATION FORMULAS.** See: differences (summation formulas); numerical methods; series.

**SYMBOLIC NOTATIONS.** See: logic (formal).

**SYMMETRIC FUNCTIONS.** See: algebra: equations (symmetric functions).

**SYNTHETIC GEOMETRY.** See: geometry (projective).

**TABLES.**

**Logarithmic and trigonometric tables.**

Uhler, H. S.	89	Peters, J.	89	Tables	89
--------------	----	------------	----	--------	----

**Special functions.**

Merrington, M.	23	Lowan, A. N.-Salzer,		*Jahnke, E.-Emde, F.	281
Chapman, S.-Majid		H. E.-Hillman, A.	148	Stratton, J. A.-Morse,	
Hulan, A.	30	Jaeger, J. C.		P. M.-Chu, L. J.	
Higuchi, S.		Clarke, M.	148	Hutner, R. A.	281
Ito, K.	62	Lowan, A. N.	197	Tables	282
Tables	89	Horenstein, W.		Lowan, A. N.	
Lowan, A. N.-Davids,		Thompson, A. J.	202	Abramowitz, M.	282
Levenson, A.	90	Rickley, W. G.	202	Berjman, E.	283
Coulson, C. A.		Philippow, A. P.	264	Bhabha, H. J.	
Duncan, W. E.	90	Gran Olson, R.	264	Chakrabarty, S. K.	291
Bertram, S.	91	Brauer, P.-Brauer, E.	274		

**Statistical tables.**

*Molina, E. C.	18	Hart, B. I.	22	Gulford, J. P.	
*Tables	19	Merrington, M.	23	Lyons, T. C.	165
Pearson, E. S.	19	Hart, B. I.	165	Nair, K. R.	165
Hartley, H. O.	19			Berjman, E.	283

**TAUBERIAN THEOREMS.**

Agnew, R. P.	81	Fuchs, W. H. J.	
Pitt, H. R.	83	Rogozinski, W. W.	272

**TENSORS.** See: differential geometry; vector calculus.

**TESTS, STATISTICAL.** See: statistics (sampling theory).

**TETRAHEDRA, GEOMETRY OF.** See: geometry (elementary).

**THERMODYNAMICS.** Cf. Statistical mechanics.

Behrbohm, H.		Born, M.		Jaffé, G.	208
Finl, M.	159	Bradburn, M.	206	*Margenau, H.	
Schmidt, W.	178	Bradburn, M.	207	Murphy, G. M.	268
Born, M.	206				

**THETA FUNCTIONS.** See: elliptic functions (theta functions).

**THREE BODY PROBLEM.** See: astronomy (three body problem).

**TIDES.** See: geophysics (hydrology).

**TIME SERIES.** See: statistics (time series).

**TOPOLOGY.** Cf. Continuous geometry; functional analysis; groups (continuous); sets.

*Lefschetz, S.	84, 86	*Whyburn, G. T.	86
----------------	--------	-----------------	----

**Combinatorial topology, complexes, simplicial approximation.**

Freudenthal, H.	88	Eckmann, B.	173	Begle, E. G.	225
Whitehead, G. W.	88	Hopf, H.	173	Milgram, A. N.	249
Eilenberg, S.		Fox, R. H.	224	Pontrjagin, L.	249
MacLane, S.	88	Eilenberg, S.		Alexandroff, P.	249
Stiefel, E.	134	MacLane, S.	224	Clark, C. E.	250
Ehresmann, C.	146	Mayer, W.		Montgomery, D.	
Pontrjagin, L.	147	Campbell, A. D.	225	Samelson, H.	250
Clark, C. E.	172				

**Knots.**

Newman, M. H. A.	252
------------------	-----

**Graphs, four-color problem and related topics.**

Gilbert, P. W.	88	Radó, T.	224	Erdős, P.	
Bullig, G.	133			Kakutani, S.	249

**Topology of point sets, curves and continua.**

Eilenberg, S.		Whyburn, G. T.	89	Eilenberg, S.-Harrold,	
Wilder, R. L.	87	Moore, R. L.	146	O. G., Jr.	172
Begle, E. G.	87	Hall, D. W.	147	Blumenthal, L. M.	223
Sebastião e Silva, J.	87	Cartan, H.	147	Vicente Gonçalves, J.	241
Vicente Gonçalves, J.	87			Alexandroff, P.	249

**Transformations of sets.**

Hopf, H.		Wallace, A. D.	147	Whyburn, G. T.	224
Samelson, H.	3	Goffman, C.	172	Fox, R. H.	224
Smith, P. A.	3	Schweigert, G. E.	172	Peiser, A. M.	249
de Kertész, J.	3	Reichelderfer, P. V.	213	Pontrjagin, L.	249
Ehresmann, C.	146				

**Manifolds.**

Hopf, H.		Pontrjagin, L.	147	Whitney, H.	193
Samelson, H.	3	Hopf, H.	173	Kiang, T.	224
Begle, E. G.	87				

**Topological spaces, theory of dimension.**

Taylor, A. E.	12	Ehresmann, C.	146	Eilenberg, S.	223
Albuquerque, J.	75	Menger, K.	147	Radó, T.	224
Monteiro, A.	87	Wasilickoff, D.	162	James, R. C.	224
Albuquerque, J.	87	Roberta, J. H.		Bourgin, D. G.	247
Szymanski, P.	87	Civin, F.	172	Schoenberg, I. J.	247
Pitche, E.		Sirvint, U.	219	Young, J. W. T.	249
Smiley, M. F.	87	Albuquerque, J.	223	Milgram, A. N.	249
Eilenberg, S.		Monteiro, A.		Peiser, A. M.	249
Wilder, R. L.	87	Ribeiro, H.	223	Blumenthal, L. M.	251
Wallace, A. D.	87				

**Fixed points and sets.**

Schweigert, G. E.	172	Eckmann, B.	173
-------------------	-----	-------------	-----

**Applications to analysis.** Cf. Calculus of variations (topological problems); functional analysis (existence theorems).

Sagastume Berra,		Heine, M. H.	77	Lefschetz, S.	142
A. E.	69	Aronszajn, N.	100	Eckmann, B.	173

**TRANSCENDENCY PROBLEMS.** See: Diophantine approximations (transcendency problems).

**TRANSFINITE DIAMETER.** See: polynomials (polynomial approximations); potential theory (capacity constants).

**TRANSFINITE NUMBERS.** See: sets (transfinite numbers).

**TRIANGLES.** See: geometry (elementary).

**TRIGONOMETRIC INTERPOLATION.** See: Fourier series (trigonometric interpolation).

**TRIGONOMETRIC POLYNOMIALS AND SERIES.** See: Fourier series.

**TRIGONOMETRY.** Cf. Geodesy.

Lense, J.	252
-----------	-----

**TURBULENCE.** See: mechanics of continua (turbulence); statistical mechanics.

**UNIFORMIZATION.** See: functions of complex variables (Riemann surfaces).

**UNIVALENT FUNCTIONS.** See: functions of complex variables.

**VARIATIONS, CALCULUS OF.** See: calculus of variations.

**VECTOR AND TENSOR CALCULUS.** Cf. Differential geometry; geometry (projective).

*Kron, G.	29	Band, W.	56	Birkhoff, G. D.	115
-----------	----	----------	----	-----------------	-----

**Tensors, spinors and related topics.** Cf. Quantum mechanics; relativity.

Robinson, L.-B.	44	Breck, R. H.		Goncalves	
Stokes, E. C.	46	Wade, T. L.	128	Miranda, M.	172
Piquet, P. V.	49	Robinson, G. de B.	128	Ghosh, N. N.	179
Ghosh, N. N.	54	Beckenbach, E. F.	135	Jung, F.	268

**VIBRATIONS.** See: differential equations; electricity; mechanics (oscillations); mechanics of continua (wave propagation); numerical methods (differential equations; practical harmonic analysis).

**WARING PROBLEM.** See: number theory (Waring problem).

**WAVE MECHANICS.** See: quantum mechanics.

**WAVES.** See: acoustics; differential equations; electricity (waves); geophysics; mechanics of continua (wave propagation); numerical methods (differential equations).

**WEBS, GEOMETRY OF.** See: differential geometry (families of curves).

**WHITTAKER FUNCTIONS.** See: special functions (Bessel functions).

**ZEROS.** See: algebra: equations (zeros); functions of complex variables (zeros); numerical methods (equations); polynomials (zeros); special functions.

**ZETA FUNCTIONS.** See: Dirichlet series (zeta functions); number theory.

## ERRATA

## VOLUME 2

## P. 45: Badellino.

The information contained in the last sentence is inaccurate. The paper actually gives tables (to nine places) of  $e^{-x}I_0$ ,  $e^{-x}I_1$ ,  $e^{-x}K_0$ ,  $e^{-x}K_1$ , for integer values of  $x$  between 20 and 50.

## P. 238: Peters.

The title should read: Logarithmen der Zahlen, Antilogarithmen, Additions- und Subtraktionslogarithmen, nebst einem Anhang mit Formeln und Konstanten.

## VOLUME 3

## P. 195: Nakayama.

The volume number was taken from a reprint. Actually, the paper appeared in volume 17, pp. 165-184.

## P. 265: Vandiver.

In the second display read  $(f_{n_1} + \dots + f_{n_r})'$  instead of  $(f_{n_1} + \dots + f_{n_r})$ .

## VOLUME 4

## P. 95: Galanin.

The author's name is Galanin, not Galinin.

## P. 117: Fessenkoff.

The volume number should be 20 and not 19 (as given on the cover pages on some issues of the journal).

## P. 133: Miller.

The last sentence should be omitted. The reviewer wishes to apologize for having made the unjust criticism contained in it. J. S. Frame (East Lansing, Mich.).

## P. 173: Campbell.

In the review it was erroneously stated that there was no interpretation for which the author's formula was completely correct. The essence of the paper appears to be contained in the following theorem: Let the cosine of the angle between  $x_F$ -axis of a reference frame  $F$  and the

$x_F$ -axis of a reference frame  $F$  be denoted by  $l_{ij}(t)$  at time  $t$ . Let  $V[x_h, t]$  be a vector function of time  $t$  and of a moving point  $P$  whose coordinates with respect to  $F$  are  $x_1(t)$ ,  $x_2(t)$ ,  $x_3(t)$  at time  $t$ . Let  $\bar{V}[\bar{x}_h, t]$  be another vector function of time  $t$  and of the same point  $P$  whose coordinates with respect to  $\bar{F}$  are  $\bar{x}_1(t)$ ,  $\bar{x}_2(t)$ ,  $\bar{x}_3(t)$  at time  $t$ , such that its components are given in terms of the components of  $V$  by means of the equations

$$\bar{V}[\bar{x}_h, t] = \sum_{j=1}^3 l_{ij}(t) V_j \left[ \sum_{k=1}^3 l_{ik}(t) \bar{x}_k, t \right].$$

Then, if the frames  $F$  and  $\bar{F}$  coincide at  $t=t_0$ , we have

$$\frac{d\bar{V}}{dt} = \frac{dV}{dt} + \omega \times V + (u \cdot \nabla) V, \quad \text{at } t=t_0,$$

where  $\omega$  is the vector of  $F$  with respect to  $\bar{F}$  and where  $u$  is the vector velocity of the origin of  $F$  with respect to  $\bar{F}$  at  $t=t_0$ .

This theorem was formulated by the reviewer as a result of a lengthy correspondence with the author. It should be stated, however, that the author does not agree that this is a correct statement of the content of his paper.

D. C. Lewis (New York, N. Y.).

## P. 180: Kachanov.

In the third line for "reviewed above," read "reviewed on p. 232."

## P. 184: Mann.

The parenthetic sentence at the end of the review should be omitted. The author's proof is correct.

H. S. M. Coxeter (Toronto, Ont.).

## P. 281: Jahnke-Emde.

Contrary to the statement in the review there does not seem to exist a later German edition of the book. The book referred to is by Emde and contains only tables of elementary functions.



at  
of  
to  $F$   
her  
osee  
at  
the

ve

$= t_0$ ,

here  
t to

as a  
. It  
gree  
per.  
).

wed

ould  
).

not  
The  
es of



## THE ANNALS OF MATHEMATICAL STATISTICS

EDITED BY  
S. S. WILKS, *Editor*

A. T. CRAIG      H. HOTELLING  
W. E. DEMING      J. NEYMAN  
T. C. FRY      W. A. SHEWHART

WITH THE COOPERATION OF

W. G. COCHRAN      P. S. DWYER  
J. H. CURTISS      C. EISENHART  
H. F. DODGE      W. K. FELLER

P. G. HOEL  
W. G. MADOW  
A. WALD

Published quarterly by the  
**INSTITUTE OF  
MATHEMATICAL STATISTICS**

\$5.00 per year

Inquiries and subscription orders should be sent to  
E. G. OLDS, Secretary of the  
**INSTITUTE OF MATHEMATICAL STATISTICS,**  
Carnegie Institute of Technology, Pittsburgh, Pa.

## ANNALS OF MATHEMATICS STUDIES

1. **Algebraic Theory of Numbers**  
By HERMANN WEYL 227 pp. \$2.25
2. **Convergence and Uniformity in Topology**  
By JOHN W. TUKEY 95 pp. \$1.50
3. **The Consistency of the Continuum Hypothesis**  
By KURT GÖDEL 68 pp. \$1.25
4. **An Introduction to Linear Transformations in Hilbert Space**  
By F. J. MORRIS 135 pp. \$1.75
5. **The Two-Valued Iterative Systems of Mathematical Logic**  
By EMIL L. POST 122 pp. \$1.75
6. **The Calculus of Lambda-Conversion**  
By ALONZO CHURCH 77 pp. \$1.25
7. **Finite Dimensional Vector Spaces**  
By PAUL R. HILBERT 201 pp. \$2.35
8. **Metric Methods in Finaler Space and in the Foundations of Geometry**  
By HERBERT BISHOP 247 pp. \$3.00
9. **Degree of Approximation by Polynomials in the Complex Domain**  
By W. E. SEWELL 246 pp. \$3.00
10. **Topics in Topology**  
By SOLOMON LEFSCHITZ 139 pp. \$2.00
11. **Introduction to Non-Linear Mechanics**  
By N. KATKOFF and N. BOGOLUBOV 108 pp. \$1.65
12. **Meromorphic Functions and Analytic Curves**  
By HERMANN WEYL 277 pp. \$3.50

Also prices subject to occasional discount of fifteen percent.

**PRINCETON UNIVERSITY PRESS**  
Princeton, New Jersey

## OUTSTANDING McGRAW-HILL BOOKS

### Plane and Spherical Trigonometry. Alternate edition.

By LYMAN M. KELLS, WILLIS F. KERN and JAMES R. BLAND, U. S. Naval Academy. 371 pages, 6 X 9. \$2.00. With tables, \$2.75

The purpose of this edition of the authors' well known *Plane and Spherical Trigonometry* is to adapt the book even better to conditions of war. Features: applications of the mil and the milian as used in the Army and Navy; a discussion of piloting with corresponding applications; a discussion of plane sailing and Mercator Charts with applications; a complete recasting of the chapter on applications of spherical trigonometry; etc.

### Navigation

By LYMAN M. KELLS, WILLIS F. KERN and JAMES R. BLAND. 479 pages, 6 X 9. Textbook edition, \$3.75

This text is also available in two separately published volumes:

**Part I. Coastal and Inland Waterways Piloting.** 288 pages, 6 X 9. Textbook edition, \$2.50

**Part II. Celestial Navigation and Nautical Astronomy.** 281 pages, 6 X 9. Textbook edition \$2.00  
*Navigation* presents a complete course in the subject, dealing with the best and latest methods used in navigation practice. Unusual simplicity is obtained through logical arrangement of material and careful preparation for each development.

### Military Applications of Mathematics

By PAUL P. HANSON, The Mathias School, New York. 425 pages, 5 1/2 X 8. Textbook edition, \$2.40

Brings together in one volume the problems in all branches of the Armed Forces that can be solved with a background of high school mathematics. The problems are grouped according to Army and Navy classifications—Maps and Map Reading, Field Artillery, Air Navigation, and Miscellaneous—and are arranged in order of difficulty.

### Mathematics for Navigators

By Lieut. Comdr. DELWYN HYATT, U. S. Navy, U. S. Merchant Marine Academy, Kings Point, N. Y., and Comdr. B. M. DOUGLASS, USNR, U. S. Marine Cadet Basic School, Pass Christian, Miss.  
In press—ready in December

A refresher in mathematics devoted exclusively to the preparation of the student for the study of navigation. Special attention has been given to recent advances in the field. A feature of the book is the explanation of Ageton's Method (HO 211). There is a wealth of carefully graded problems.

### Vector and Tensor Analysis

By HOMER V. CRAIG, University of Texas. 443 pages, 6 X 9. \$3.50

Provides a fairly rigorous, yet clear and accurate, introduction to the important subjects of vector and tensor analysis. Transformation and invariance aspects, particularly of vector analysis, are emphasized.

Send for copies on approval

**McGRAW-HILL BOOK COMPANY, INC.**  
330 West 42nd Street, New York 18, N. Y.

# American Institute of Physics—

*The purpose of the Institute is the advancement of and diffusion of knowledge of the science of physics and its applications to human welfare, and to this end it is part of the purpose of the Institute to undertake, among other measures, the publication of scientific journals devoted wholly or mainly to physics. The publication program includes the following:*

*For the American Physical Society*

## THE PHYSICAL REVIEW

A semi-monthly journal in which are published original researches in experimental and theoretical physics. It was established in 1893 by E. L. Nichols and published until 1913 by Cornell University. Since that time it has been the official publication of the American Physical Society.

Editor (on leave): John T. Tate.

Acting Editor: J. W. Buchta, University of Minnesota, Minneapolis, Minnesota.

Subscription price: Domestic \$15 per year; Foreign \$16.50.

## REVIEWS OF MODERN PHYSICS

A quarterly journal in which are published discussions of developments and current problems of physics.

Editor (on leave): John T. Tate.

Acting Editor: J. W. Buchta, University of Minnesota, Minneapolis, Minnesota.

Subscription price: Domestic, to members, \$3 per year; to non-members \$4; Foreign, to members, \$3.40; to non-members \$4.40.

*For the Optical Society of America*

## JOURNAL OF THE OPTICAL SOCIETY OF AMERICA

A monthly journal devoted to original papers on optics in all its branches, including such related fields as spectroscopy of all wave-lengths from the x-ray region to the far infra-red, and x-ray and electron diffraction. It is the official publication of the Optical Society of America.

Editor: George R. Harrison, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

Subscription price: Domestic \$7 per year; Foreign \$7.70.

*For the Acoustical Society of America*

## THE JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA

A quarterly journal devoted to original papers on acoustics. It is the official publication of the Acoustical Society of America.

Editor: Floyd A. Firestone, University of Michigan, Ann Arbor, Michigan.

Subscription price: Domestic \$6 per year; Foreign \$6.60.

*For the American Association of  
Physics Teachers*

## AMERICAN JOURNAL OF PHYSICS

A bi-monthly journal that stresses the educational, historical, socio-economic and philosophic aspects of physics, and the instruction of students who take physics as part of a liberal education as well as those who specialize in the science. It is the official publication of the American Association of Physics Teachers.

Editor: Duane Roller, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

Subscription price: Domestic \$5 per year; Foreign \$5.50.

*Under Institute Sponsorship*

## THE REVIEW OF SCIENTIFIC INSTRUMENTS

A monthly journal devoted to scientific instruments, apparatus and techniques. It publishes original and review articles on instruments in physics and related sciences, laboratory techniques, book reviews, current literature and advertisements.

Editor: Gaylord P. Harnwell, Randal Morgan Laboratory of Physics, University of Pennsylvania, Philadelphia, Pennsylvania.

Subscription price: Domestic, to members, \$3 per year; to non-members \$5.00; Foreign, to members, \$3.50; to non-members \$5.50.

## THE JOURNAL OF CHEMICAL PHYSICS

A monthly journal designed to bridge the gap between journals of physics and journals of chemistry.

Editor: Joseph E. Mayer, Columbia University, New York 27, New York.

Subscription price: Domestic \$10 per year; Foreign \$11.

## JOURNAL OF APPLIED PHYSICS

A monthly journal designed particularly for those applying physics in industry and in other sciences. It publishes reviews of recent progress in applied physics, original research papers, news and advertisements.

Editor: Elmer Hutchison, 50th Floor, 350 Fifth Avenue, New York 1, New York.

Subscription price: Domestic, to members, \$5 per year; to non-members \$7; Foreign, to members, \$5.70; to non-members \$7.70.

*Manuscripts submitted for publication should be sent to the Editor in all cases. Subscription and back number orders should be addressed to the American Institute of Physics, 175 Fifth Avenue, New York 10, New York.*



2  
2  
2

4  
2  
a  
e  
1

1  
n

a,  
w  
s,  
d

a-  
a,

r;  
n-

en

ew

1.

ng  
re-  
ch

ue,

ar;  
on-